THE

physical therapy

REVIEW

Volume 34 - Number 1 January 1954

Symposium

The Patient—His Evaluation and Rehabilitation

Introduction — BUCHANAN

Patient-Therapist Relationship: Psychological Consideration — LEOPOLD

Panel on Testing

- Introduction — SNYDER
- The Manual Muscle Test in the Patient's Evaluation and Program for Treatment — GONNELLA
- Functional Tests — SMITH
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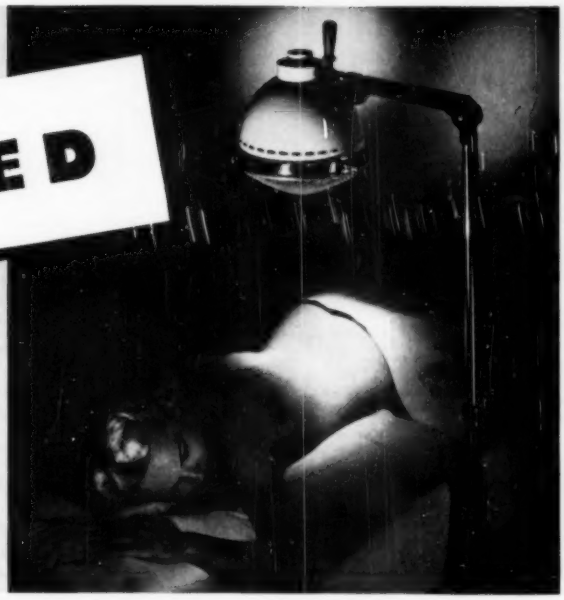

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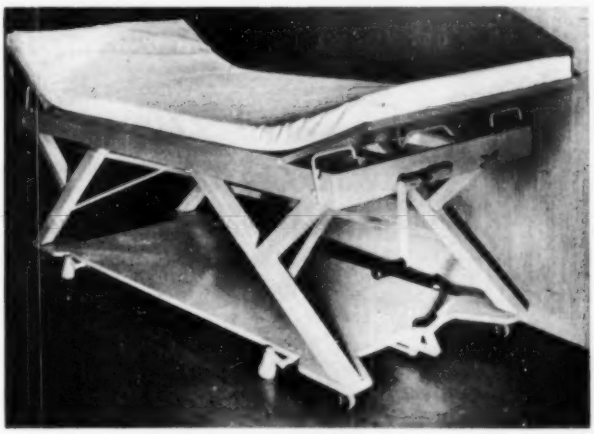

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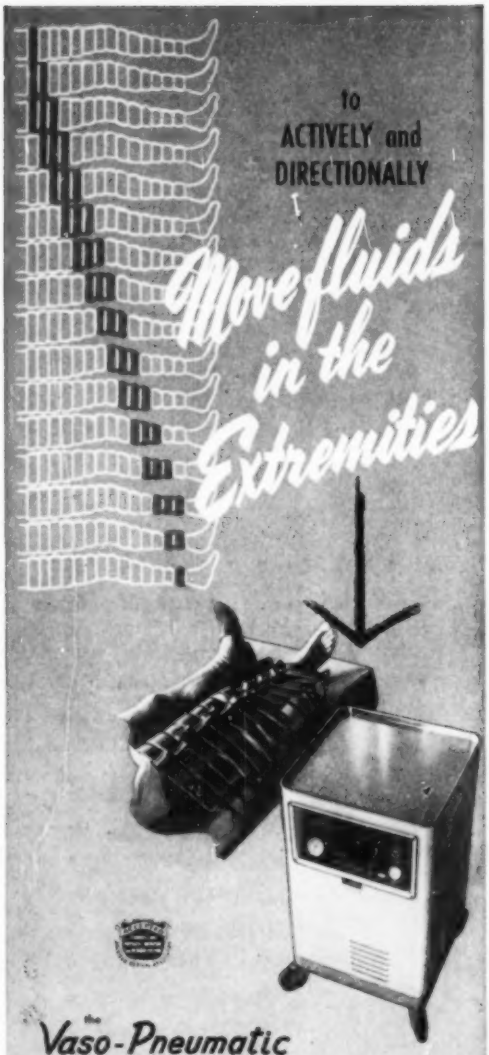

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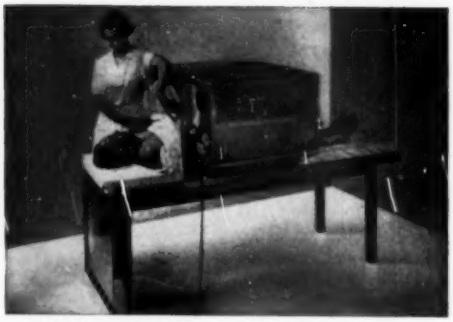

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The Physical Therapy Review

Official Publication of The American Physical Therapy Association

Vol. 34 **January 1954** **Number 1**

SYMPOSIUM

The Patient—His Evaluation and Rehabilitation

Introduction

Josephine Buchanan, M.D.

The medical profession, including all its specialties and its para-medical branches, must be the force responsible for preventing disability and for returning the disabled patient to his society with every potential realized or made possible of realization. All who come in contact with the disabled patient should have in mind not only his specific injury, illness or disability, but also his ultimate ability to function as nearly like a normal person as possible. The physical therapist must be concerned with more of the patient's rehabilitation than his muscles or his contractures and must build a program of work around all aspects of his rehabilitation. This kind of approach must be assumed by the social worker, the psychologist, the vocational counsellor, and all members of the team. Furthermore, each member of the team having this kind of total interest must constantly make use of the knowledge and skills of the others on the team and must constantly exchange information and ideas. Thus, while each is practicing his own particular skill, he is, at the same time, practicing total rehabilitation.

The actual mechanisms or organizations through which this team approach may be implemented can take as many forms as there are different situations. But, to me, there must be one basic, underlying factor which always exists, and that is *one individual* who controls or serves to coordinate the entire program and from whom and around whom the well-planned program revolves and progresses. The only individual that I know of who can answer most of the requirements is the physician who has not only the interest but also specialized training in the technics of rehabilitation, and who firmly possesses an enthusiastic philosophy of total rehabilitation.

Lastly, I feel that one of the greatest obligations which we all have today is that of contributing towards the education of our colleagues. I feel very strongly that every physical therapist,

Chief of the Physical Medicine Service, Gallinger Hospital; Chief, Rehabilitation Division, of Chronic Diseases and Tuberculosis, United States Public Health Service, Washington, D. C.

* All papers published in this issue of the Review are a part of the Symposium presented at the annual conference of the American Physical Therapy Association, June 1953, Dallas, Texas.

every doctor, every social worker, and each of the team who has training and knowledge in dealing with the disabled should dedicate himself to the dissemination of this knowledge, not only among his own associates, but to all others who may be or become members of the rehabilitation team. I do not look with favor upon the monopoly of all rehabilitation efforts by only the few who are classed as specialists. We must integrate all this knowledge into all our medical, social, and vocational programs in order to begin to solve the problem of disability in this country.

Patient-Therapist Relationship: Psychological Consideration

Robert L. Leopold, M.D.

I. INTRODUCTION

It has been said that two is company and that three is a crowd. Yet when we consider the complicated structure of any two-person relationship, we see it crowded with many things and see so many factors enter this seemingly straight forward "company of two" that, for our purposes, it is well to think of any two-person relationship as a crowded one.

The interpersonal relationship which exists between the physical therapist and the patient he treats ordinarily receives little thought or comment. Yet this dynamic relationship is the emotional bridge over which the more mechanical forms of treatment are conducted. The manner in which this bridge is built may be the most important feature in influencing therapy successfully.

Data concerning the psychological phenomena which occur during interpersonal relationships come from several sources. Observation of such relationships, and the common sense appraisal of the exchange of conversations and feelings which occur, form a solid platform on which to build. During the last several decades there have been increasing amounts of information derived from psychiatric therapy with adults and psychiatric play therapy with children. During any intensive psychotherapeutic experience much attention is, of necessity, directed to an understanding of the feelings which flow between patient and therapist. As these interchanges have become more meaningful, it has been possible to apply the concepts gained more generally, so that there is now a sufficient background for us to apply them to our problem here.

Knowledge of personality development has been gained in a similar way so that we now have a well established group of hypotheses with which to guide our understanding.

From a conventional standpoint, the interpersonal relationship which takes place in the physical medicine department consists of a person with special skills performing a skilled technical job with, and for, a person with a special problem, whom we call a patient. Actually this relationship presents significant psychological problems, most of these on the part of the patient; but also some on the side of the therapist. Some of these are on a conscious level, but others are hidden from awareness. All human beings react to situations on both conscious and unconscious levels, and many of the feelings and attitudes which are most important to us never reach the level of our conscious awareness.

The patient and the physical therapist are together for relatively brief periods of time which occur at somewhat irregular intervals. In many departments, the patient can be seen for an hour only once every two or three days. Even this hour may be interrupted by demands which turn the therapist's attention from the individual patient under his care. The time spent with each patient represents a rather small segment of the therapist's life. In the course of the therapist's busy day, the patient often becomes, not an in-

Director, Functional Clinic, Graduate Hospital of University of Pennsylvania, Philadelphia.
From the Department of Neurology-Psychiatry, Graduate School of Medicine, University of Pennsylvania.

dividual, but a person with a diagnosis. When this occurs the diagnosis itself may establish for the therapist his attitude toward the patient, and he will, unconsciously, set himself for a pleasant or for an unpleasant interlude in his professional life. For example, the therapist is likely to feel kindly disposed toward the diagnosis of Bell's palsy since he knows the patient will recover with skilled treatment, and will be a credit to him. Moreover, he will be able to see concrete results from his professional skill. A diagnosis of chronic debilitating disease, such as hemiplegia or multiple sclerosis, represents a diagnosis with unpleasant implications, since the therapist will realize that even with skilled care the patient may not show great improvement or even may get worse. Thus, unconsciously, the therapist may feel that such a patient will do him discredit. The unpleasantness of the association may be increased by the fact that the chronically ill patient may tend to blame the therapist for the patient's own illness, or he may express the feeling that the fact that he is not making satisfactory progress is due to the therapist's lack of skill, lack of understanding, or lack of interest.

For the patient, and especially for the chronically ill patient, the physical therapy situation often becomes the focusing point for all of the problems raised by his illness. Here each day he meets with the instruments which he hopes will make him well.

The visits to the physical therapy department may be the only active treatment the patient receives, and they are usually the treatment of the longest duration and the most consistency. Many of his hopes and aspirations for improvement, accordingly, will be placed here. Not only hopes but fears concerning the outcome of the illness, the shame centering around bodily mutilation and, indeed, all manner of anxieties engendered by the effect of the illness on the patient may be projected to the therapeutic experience. The chronically ill human being undergoes profound emotional changes and his visit to the therapy department may be the only hopeful situation in his day. Often he is unaware of just how deeply he feels the importance of the emotional reaction with the therapist, and almost always he is unaware of some of the deeper feelings, centered around his illness, by means of which he involves the therapist in his fantasies.

We now have seen that therapy, in addition to its more mechanical aspects, consists of a complicated interpersonal relationship, and that this relationship itself becomes the bridge on which the more mechanical forms of therapy are carried.

II. THE PATIENT

We now can consider in somewhat more detail the psychological problems which confront the patient. But what is a "patient"? Webster states that the term is derived from the Latin verb "pati"—to suffer, and a patient, therefore, is one who undergoes suffering. In our roles as medical people this concept of illness as being "suffering" must always be before us. Let us further define a patient as a person plus a problem which causes suffering. The problem may be physical, or it may be emotional, and usually it is both.

What of the person who has the problem? In particular, what of this person before he was taken ill. Each of us is potentially a patient, and the person who is ill, prior to entering the special category of patient, was an ordinary human being. As a human being he had all of the privileges and all of the pains which any human being encounters as he matures.

Differences between normal persons are great, and there is certainly little specificity as to the type of person who will develop one of the various kinds of illnesses. Accordingly, the people whom we meet as patients are precisely the same people we would otherwise have met at dances and parties and in the course of our social and business lives.

Any discussion of the course of personality development in the patient is the study of personality development in the average normal human being. We must exclude from this consideration children who have congenital difficulties or those defects which are acquired early in life. There is not the time to give a complete account of personality development. However, there are certain trends in normal development which will help us to understand more specifically the problems which a person who becomes ill must face. These hypotheses have been formulated in the last half century from the study of many hundreds of adults and children of psychoanalytically trained physicians. These concepts are not to be taken as gospel truth, but as useful working principles which, while still only tentative, can further our understanding of the psychological aspects of growing up. The details need to be worked out further, but by now the main outlines stand out fairly clear.

The first trend is that of dependency. All human beings must start life as infants who are entirely dependent on those around them. The infant is dependent on mother for food, for physical care, for love, and for security. Quite literally, if his needs are not met by the outside

world he will die. It is necessary to realize that all feelings have their ultimate roots in the body itself and are derived in a final analysis in physical sensations. It is not hard to imagine what great terror the infant must feel if the outside world is unkind and does not care for him. Moreover, the infant seems to have little knowledge of his own personal identity and, indeed, does not perceive mother as being different from himself for the first four or five months of life. Failure to be comfortable or secure would seem, therefore, from the infant's point of view, to belong to him rather than to the outside world, and failure to receive adequate care builds a deep, although unconscious, sense of failure and fright, which is based on a false sense of one's own inadequacies.

The young infant, then, is a passive dependent creature. His very basic dependency needs continue in a somewhat modified form throughout life, since no one is actually ever independent. With illness, and its enforced dependency, the feelings of early life are reactivated and, if the first years of life were not secure, the uncertainties of this period may be reexperienced by the sick adult without his ever being aware of this reexperience.

The second of the trends is that of aggressiveness. As the infant reaches the second half of the first year of life, he begins to learn the difference between his own body and the external world. He begins to explore the world, first with his eyes, then with his mouth, and finally with his hands and body. Instead of sucking in that which is important he begins to bite and to explore. In his biting we see the start of those aggressive impulses which, throughout normal life, will counterbalance the dependency needs. The aggressive impulses represent the sources from which the drives for growth, maturity, and relative independence spring. As the young child begins to reach out into the world, he begins to establish relationships. The first relationship is not with a person but with a thing — with the food he eats — and the sequence of sucking-biting represents the two tines of the fork of dependency-aggression which exists for all of us. Only later, and on the basis of this earlier experience, does he begin to establish a relationship with the giver of food, the mother. Here, then, is the first interpersonal relationship with its mixture of aggression and dependence. Aggressive feelings continue to develop during the period of bowel training, when the child's desire to soil is not viewed very tolerantly by the mother. Aggressive self-assertion is permitted in other ways, through physical exercise, creative play, and in minor forms of destructiveness. These activities permit the excessive aggressive impulses to be carried off while the main thrusts for growth continue. The person who is ill for a moderately long period of time dislikes his dependency and the control of others much as the child hates them, but he is denied the substitute ways of getting rid of the aggressive feelings. It is small wonder that the chronically ill patient may be aflame with aggression and may attempt to burn the therapist with it.

The third of these trends is that of bodily gratification. The act of sucking apparently is pleasurable in itself, apart from the function it serves of food intake. The infant gets pleasure from the physical care he receives from mother, from the touching, petting, changing of diaper, and hugging. These gratifications are diffuse and aid the child in defining the boundaries of his own personality. As he grows up, these pleasures become somewhat more concentrated. The child from two to four centers a good deal of pleasure around bowel habits and urination, and the youngster from four to seven becomes quite interested in his sexual apparatus. As a person goes through adolescence he learns to subordinate all of these partial gratifications—touching, looking, retaining, masturbating—to the service of mature love. In a sense he thus overcomes the limitations of his own body and can use these energies to have relationships with objects outside his own body either in the form of friendships, or eventually, in the form of mature sexual gratification. I should like to emphasize the complicated nature of this process. It takes 20 to 25 years for a person to grow from an infant, whose bodily gratification comes entirely from his own sensations, to a mature adult who has real capacity for relationships with other people. In long illnesses this hard won battle is commonly lost, at least temporarily, and the patient regresses to an earlier mode of feeling which is more concerned with deriving pleasure from within himself than by means of outside sources.

It is apparent that when the child first learns about his own body his image of it must be quite unlike that of the adult. The infant must first learn that he is separate from mother. He then probably sees himself as mostly mouth and extremities. Only very gradually does his own image of his body approach the body image he will have in mature life. As the concept of the body image crystallizes, it becomes the core of the individual's emotional life, the core of the person as he visualizes and knows himself. When any illness disturbs the concept of the intact body image, it of necessity upsets the core of the human

being. Sicknesses in which the body is disfigured such as hemiplegias, amputations, or those involving unsightly mutilations or loss of the special senses are especially severe from the psychological aspect and require special understanding on the part of the therapist. When serious or mutilating illnesses occur in childhood, one often finds a distortion of the entire personality as it develops.

We have now discussed these aspects of personality development: dependency; aggressiveness; the problems of bodily gratification; and problems centering around the formation of the body image. We have seen that each individual must integrate his own experiences regarding each of these so that he is not overly dependent, nor overly aggressive, and so that he can have mature friendships centering around a stable personality core. All of these aspects, then, demand final integration so that the mature person can live comfortably in a complicated world. The degree of integration attained varies widely among normal individuals. When the integration of component trends within a person is strong, and the ultimate integration of the factors with each other is healthy, even major illnesses can be accepted maturely. When this integration is incomplete, as is more commonly the case, illness produces greater psychological disintegation. Occasionally one sees people whose integration is so poor that minor illnesses cause major psychological problems, as in the case of the traumatic neurosis.

The manner in which the patient accepts his illness, therefore, is determined both by the degree of personality integration and the nature of the illness itself. Severe debilitating illness, acute and chronic, does cause suffering. It does foster dependency, yet does not permit aggression adequate expression. It does alter one's concept of one's self. It does not permit mature sexual gratification. It does then, in reality, take an adult human being and put him emotionally in the role of a child, a child who, nevertheless, retains the adult memories of mature living. The patient must look to his surroundings again for gratification, as he did at a much earlier period of life. He will enjoy a massage with its touching and patting more than he would if he were well. He will need the relationship with the therapist more and be dependent on it, yet he will retain the child-like prerogative of anger. He may hate you as the person who sees his maimed body and, at the same time, love you for taking care of it. In short, he will not be a smoothly integrated adult nor a normal child, but a sick, threatened human being who has lost for a time his psychological integrity. If we are to understand our patients we must realize that, although we exist in the same physical world, this world looks different to each of us. We may see little progress, yet to a patient the movement of a toe may be of vast importance since it symbolizes the hope of the ability to get well.

Those who have been fortunate enough to have had moderately disabling illness can appreciate how perspective changes and how time takes on a different meaning. Events of major importance in the world of the healthy seem insignificant, and interest becomes centered narrowly within the sick room. Both progress toward health and disappointments which hinder getting well are magnified to a point almost inconceivable to the well observer. Hope and progress are the great reintegrators and must be sought for and nurtured.

III. THE THERAPIST

The therapist is also an individual, and one who has been subjected to pressures in growing up similar to that of his patient. In addition, the therapist is a person with a specialized skill. Sometimes the therapist, too, has problems in his own life, but these are not usually of the same magnitude as those of the patient. Therefore, if we ask of the therapist — what kind of a human being was he before he met his patient? — we must expect the same answer as when a like question was asked of the patient.

The therapist has had to integrate the same drives and needs into his own personality as did the patient. But at the time that the patient-therapist relationship is established there is a very significant difference between the two people. For the patient, the illness represents a disintegrating force; while, for the therapist his continuing advance in his professional life represents a major force toward ever increasing maturity and integration.

The reasons why a person chooses to spend his life in a medical discipline are varied and not always apparent. The usual explanation is that one goes into a medical art for altruistic purposes, that is, to be able to help others attain a healthier, happier way of life. The psychiatrist, at the risk of seeming cynical, can accept this only as a partial motive. For one thing, there are reasons of financial gain and social prestige. For another, psychologically speaking, a medical field offers the opportunity for certain kinds of unconscious gratification which occur when we see how, through our own skill, we exert such marked in-

fluence over the life of another. This factor may be called the narcissistic gain. Those of you who are versed in mythology will recall that Narcissus was a handsome youth who fell in love with his own reflection in the water of a pond. Leaning over to kiss his reflection in the water, he slipped and was drowned. Perhaps the fable suggests some of the dangers that may lurk for all of us when we begin to feel overly complacent with our medical powers and skills.

No human being, no matter how mature, achieves maximum integration. The therapist, like any other person, is going to have chinks in his psychological armor. Patients have an amazing ability to sense these weaker areas, and they are likely to direct their attacks at the therapist toward these. For example, if the physical therapist's hands are slightly moist or cold, the patient may remark about this. A squint or a limp may not go unnoticed, and a pointed comment made. It is important to some patients to try to prove that the therapist also is ill, and, thus, not so different from the patient. If the therapist is not aware that the reason for the patient's attack is the patient's own insecurity, rather than any basic dislike for the therapist, there is the danger that the therapist will interact with the patient and himself feel threatened and unhappy.

IV. The Dynamics of the Treatment Situation

It now appears that this "company of two" has become an interplay between highly complex, differently integrated, differently motivated human beings, each of whom has undergone a long battle for maturity, and each of whom brings to the treatment experience a host of feelings and attitudes. The common meeting ground of treatment often will be obscured by these diverse unconscious factors. When the therapist reacts excessively to the unconscious factors, the emotional bridge of therapy becomes insufficient to carry its burden, and the therapeutic experience becomes unsuccessful.

We have seen that the patient reacts, in treatment, not primarily toward the therapist, but toward his own unconscious feelings and emotions which he projects on the therapist, as a lantern slide is projected toward a screen. This projection of attitudes toward the therapist to whom they are not appropriate, from feelings in earlier life to which they actually may have been appropriate, psychiatrists label transference. For example, a patient, on his first visit to the therapist, may be very disagreeable and angry. The therapist, whose main interest is in helping the patient, will be startled and annoyed to get a blast of hostility. If he takes the anger personally he will become angry himself, and no emotional bridge can be built. Fortunately, with a little thought, the therapist can learn to recognize this situation and to handle it maturely.

The transference of positive feelings, curiously, is more troublesome for the therapist to handle, because it plays directly into his own self love. It is easy for us to feel that we are pretty reasonable people and that if a patient is angry it is not with us, but because of forces going on within him. But, if a patient flatters us, tells us how wonderful we are, what good therapists we are, and how dependent he is on us to get well, then this, because of our own narcissism, does not seem like transference but reality. We thus get caught in the trap the patient unconsciously sets for us, allow him to become dependent, and imply a promise to love him which we can not possibly fulfill. If this situation is allowed to develop, the promised love can not materialize, the patient sooner or later feels neglected and hurt, and therapy fails. The therapist is vaguely aware that he has been trapped and is himself uneasy and hurt. When this happens repeatedly, the therapist begins to question the value of his work and feels manual labor offers greater rewards and fewer frustrations.

Nor are transference phenomena the only dangers in this complex interpersonal relationship. The therapist also has personal needs which have little to do with the individual patient. Because of problems he has encountered in his own life, the therapist may need to feel powerful or to feel loved. These feelings, so often dubbed neurotic, are a part of all normal individuals, and actually form the "salt and pepper" of living. Without active drives and interests even the mature person lacks spontaneity and warmth. I should like to stress that feelings on the part of the therapist are not only inevitable, but desirable.

When the therapist projects feelings from within himself toward the patient which are not appropriate to the patient but which were appropriate to situations early in life, he exhibits another kind of transference feeling. The inappropriateness to the current situation of these feelings which arise from unconscious sources must be differentiated from the genuine emotions stirred up in the therapist by the patient. In the latter case when a patient becomes angry with us, no matter what the reason, our first reaction is to return his anger. This does not mean we should *act* angry, but we must let ourselves know that we *feel* angry. If a patient is flattering, we must

permit ourselves to feel praised and yet know the praise is false so as to be able to evaluate what is going on within ourselves. Our own feelings are our best guides in this complex maze of interpersonal relationship, and we must recognize these emotions and learn to trust them. Only if the physical therapist is aware of his own feelings can he handle them in an intelligent manner; to interact with the patient destroys the main goal of treatment, i.e., to help the patient to get well.

Problems of inappropriate emotions are lesser ones but are harder to recognize. As stated above, most healthy persons have unresolved feelings concerning their own dependency needs, needs to be loved, or needs to be aggressive. When these drives become intense, the physical therapist may project his own needs to his patient, and this is especially true because the needs of the patient foster this projection. When the ill person needs to be loved, and the healthier person needs to love, the relationship they establish is based on their own inner tension rather than on a mature friendship. On the other hand, the therapist, because of his own unconscious feelings, may need to control other people. He may then rationalize his handling of patients by saying that one has to be firm with people. But patients may sense his need for power beneath his "firmness," and react hostily to it.

The person who is skilled in the handling of others, be he physician, minister, or physical therapist, knows intuitively how to react to the changing emotional scene. He has a full, although unconscious, perception of his own feelings and those of his patient and has learned through experience to rely on his own intuition. For those who sense that they are, in some measure, lacking in this golden touch, there are no easy ways to develop the capacity to look inside one's self and so to detect these feelings before they develop fully. The only rule of which I know is to be eternally vigilant, that is, to develop and maintain an interest in looking inside one's self. This calls for considerable courage and rigorous integrity. It needs a good deal of practice. With repeated practice it is possible to become skilled at understanding the emotions of both ourselves and our patients. By doing so, we gain both as individuals and as therapists. The emotional aspect of treatment deserves as much attention as does the physical. With due attention to both factors, physical therapy becomes an increasingly rewarding experience, both for the therapist and the patient.

V. SUMMARY

From a psychological standpoint, the physical therapy treatment situation has as its basis the inter-relationship existing between the therapist and the patient. The therapist and the patient have some common meeting ground in terms of the patient's illness, and vast differences in terms of their own psychological make-ups and in their interests which meet only during treatment. The therapist is invested by the patient with many kinds of feelings inappropriate to the current situation, and in turn responds with feelings which may be inappropriate to the current situation. The more the therapist can be aware of these problems and of the problem of disintegration of personality traits which occur under the impact of major illness, the more able he will be to cope with the variety of interpersonal experiences arising during the physical therapy relationship.

Meet Our New Contributors

Josephine Buchanan, M.D., who obtained her Medical degree from the New York University College of Medicine in 1944, was formerly a physical therapist and is now an associate member of the American Physical Therapy Association. For the past three years she has been Chief of the Physical Medicine and Rehabilitation Service, Gallinger Hospital, Washington, D.C.; Chief, Rehabilitation, Division of Chronic Diseases and Tuberculosis, United States Public Health Service; and Assistant Professor, Clinical Physical Medicine and Rehabilitation, George Washington University School of Medicine. From 1947 to 1950, she was Director, Medical Services, Woodrow Wilson Rehabilitation Center, Fisherville, Virginia, and prior to that was Chief, Clinical Division, Baruch Center of Physical Medicine, Medical College of Virginia Hospital.

Dr. Buchanan is a Diplomate of the American Board of Physical Medicine and Rehabilitation, a member of the National Rehabilitation Association, the Medical Society of Virginia, the Virginia Academy of Science, and the International Society for the Welfare of Cripples.

Laura K. Smith, Physical Therapy Supervisor of Education and Research, Southwestern Poliomyelitis Respiratory Center, Houston, Texas, received her A.B. degree in physical education from San Jose State College, and her physical therapy preparation at Stanford University with additional preparation at Warm Springs, Georgia, and Kabat-Kaiser, California.

Miss Smith was staff physical therapist at Los Angeles County Hospital, Rancho Los Amigos, and New York

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Panel on Testing

Introduction — Major Agnes Synder, Chairman

The physical therapy panel of the symposium will present, first, an introduction which will cover briefly the objectives and the testing and treatment procedures used in the physical therapeutic management of the physically disabled person. Second, the two most commonly employed testing procedures, namely, manual muscle and functional testing, will be discussed in some detail by two members of the panel. Third, the fourth member of the panel will present the part played by the physical therapist in the treating of the physically disabled.

This introduction of the physical therapy panel is being given not with the idea of presenting anything new and different in the physical therapeutic objectives or management of physical disability but rather with the idea of re-emphasizing the goals to be achieved for the patient and the procedures used in attaining these goals most satisfactorily. It is believed that many practicing physical therapists become so involved in the specific details of the administration of the various technical procedures that they may lose sight of the total physical needs of the patient.

In this introduction, the objectives and the testing and procedures of treating the physically disabled will be developed without reference to any particular disease or disability. As physical therapists, we are well aware of the many diseases and injuries which affect the neuromuscular and musculoskeletal systems. We also are aware that these diseases and injuries leave in their wake common residuals that present all the way from minor to serious problems in motion.

The approach to rational treatment of these problems in motion first entails the evaluation of the physical disability of the patient. This evaluation is made by the physician in charge of the patient's treatment and to a great extent must be made on the basis of the findings of the various tests administered by the physical therapist. Not only do these tests have evaluation value, but, in addition, they measure accomplishment and progress in a quantitative manner.

Tests may be divided into two categories, those to measure physical capacity and those to measure functional capacity. Tests to measure physical capacity may be defined as segmental or individual motion unit tests. These tests are given to determine the physical capacity or the ability of the individual segment or unit of motion to perform its normal function.

Tests To Measure Physical Capacity

I. Tests for power in a muscle or muscle group.
II. Tests for endurance in a muscle or muscle group.
III. Tests for coordination of a muscle or muscle group.
IV. Tests for mobilization of a joint or joints.
  A. Tests for range of motion in the actual joint.
  B. Tests for elasticity of a muscle or muscle group.
    1. Testing the ability of the muscle or muscle group to relax.
    2. Testing the muscle or muscle group for contracture or mechanical shortening.
V. Electrodiagnostic and electromyographic tests.

The second catgory or tests to measure functional capacity are acts of physical performance to measure the patient's ability to meet the ordinary demands of his living in a normal environment.

Tests To Measure Functional Capacity

I. Self-care activities.
  A. Toilet.
  B. Dressing.
  C. Eating.
II. Hand activities.
  A. Communication.
  B. Management of dressing details.
  C. Handling of ordinary equipment.
III. Ambulation, elevation, and traveling activities.
  A. Getting from place to place using a wheel chair.
  B. Walking with or without appliances.
  C. Using an outside means of transportation.
  D. Elevation of the body.

Prescribing the treatment for the disabled patient presents no great problem to the physician once a comprehensive evaluation of the physical disability has been made. The needs

Chief Physical Therapist, Physical Therapy Clinic, Walter Reed Army Hospital, Washington, D.C.

of the patient determine the procedures to be used, and the program should be designed with that in mind. However, the physician is confronted with two objectives when preparing the physical treatment program. The first objective must be directed toward the restoration to maximum physical capacity of the motion units of the body. This objective is to be accomplished within the changes left by the disease or injury and in consideration of the total needs of the patient. The second objective is toward the restoration to maximum capacity of the functional ability of the patient as a whole, and is designed to prepare him by exercise and activity, to be able to assume his place safely and effectively in a normal environment. The physician in consideration of all the physical, mental, economic, social, and psychological needs of the patient must determine when objective one has been accomplished and when objective two becomes the complete requirement and goal.

With these two objectives in mind, treatment then also falls into two categories: Definitive treatment (objective one) which strives to attain the maximum physical capacity of the individual units of the body responsible for motion. Functional training (objective two) which aims to prepare the disabled patient to perform safely and practically the basic physical activities required of him upon his return to live in a normal environment.

DEFINITIVE TREATMENT

I. Maintenance treatment or preparation for motion.
   A. Passive exercise — mobilization procedures.
   B. Circulation and nutrition — heat, massage, etc.
   C. Application or exercise currents.
   D. Positioning — supportive.

II. Muscle reeducation of the manual type.
   A. Development of coordination in the individual units by manual assistance.
   B. Development of strength or power in the individual motion units by manual assistance.
   C. Maintenance at all times of proper anatomical and functional positions.

III. Progressive resistive exercise.
   A. Use of weights and counterbalances.
   B. Use of underwater resistive exercise.
   C. Positioning — supportive.

FUNCTIONAL TRAINING

Objective number two in the treatment of the physically disabled is functional training. The functional training program should include activities which permit the patient to develop sufficient strength, endurance, and coordination to perform representative tests. The program should be planned with three goals in mind.

I. To develop by exercise sufficient strength and coordination in the extensor muscles of the body to permit the patient to assume the upright position and to ambulate with or without the aid of appliances.

II. To provide the patient with sufficient exercise experience to develop coordinate patterns of trunk and extremity motions.

III. To maintain or develop sufficient mobility of the joints necessary to accomplish the above.

In dividing the testing and treating procedures into two categories each, it is not the intent to convey that there is a definite time or state of the patient when one category of tests and treatment procedures is given to the exclusion of the other category. It is, perhaps, rather a division of emphasis and one that must be based upon the total needs of the patient.

Following this brief consideration of the various objectives of tests and treatment procedures which the physical therapist performs with the patient, it is well to consider the physical therapist-patient relationship which inherently exists in this association. Dr. Charles Wise has recently stated, "The professional relationship between the physical therapist and the patient may in many instances determine the success or failure of any program of patient care. More important than any single technical skill is the ability of the physical therapist to maintain the patient's morale at its highest level."

No matter how well designed the test, the exercise, the activity, or the program, it is totally useless unless the patient is willing and properly motivated to cooperate and carry it out. The physical therapist's success in performing the various technical skills of his profession is based upon his ability to understand and analyze each patient's physical as well as psychological needs and be able to effect a working relationship that will be most useful to the individual patient's problems.

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The Manual Muscle Test in the Patient's Evaluation and Program for Treatment

Carmella Gonnella, M.S.

Because the muscle test can be an indicator of the extent, pattern of damage and potential return, because it can be a guide in the planning of logical steps to total physical rehabilitation, physical therapists who administer manual muscle tests bear a most important responsibility in the patient's rehabilitation program. From it, with the assistance of other tests we see the existing picture. How clear a picture this is to us, the physical therapists, depends on *how well we do the muscle test, and how well we study it in preparation for specific treatment.*

The muscle test serves various purposes. In many situations on the basis of that test in conjunction with other evaluations, the physician makes his diagnosis, his prognosis, his prescription for treatment, and prescription for assistive, supportive or protective apparatus. This paper will discuss two of the many purposes.

First, the muscle test is a guide. It is a guide in the planning of our treatment program. How can we know what type of exercise is indicated unless we know the strength of the muscle? To one involved part, gross resistance exercises may be indicated; to another, specific resistance exercises; and yet to another basic coordination exercises. The muscle test shows not only the strength of the muscle from which we get our starting point in developing an effective individual exercise program, but also the relative strength of antagonistic groups. An existing imbalance produces mechanical inefficiency, and may lead to a deformity which will further reduce mechanical, functional efficiency. Unless we are particularly aware of the degree of imbalance or combinations of imbalance, we cannot give the particular treatment that such imbalance demands. For example, a patient shows a tendency toward a left lumbar curve. One factor or a combination of factors may be contributing to this deviation. Does the muscle test show stronger right lumbar extensors, stronger right external and internal obliques, stronger right latissimus, and left lower trapezius? Although these groups may be barely functional and under other circumstances strengthening exercises would be indicated; it is the weaker counterparts with which we must work in an attempt to increase their strength and minimize the pull and tightening of the stronger groups. Lack of accurate recognition of the imbalances in strength and mobility is followed by an ineffective treatment program. Thus this lumbar curve may progress into a structural scoliosis with resulting pelvic obliquity, tightening of the iliotibial band, tibial torsion and varus of the foot on the left, and tightening of the hip adductors on the right. The treatment program then becomes more complicated, more time consuming, more costly, and the patient's return to maximum functional independence is delayed. The manual muscle test guides us also to the areas needing concentrated work in another respect. Unfortunately, treatment time often is limited. Instead of spreading thin our efforts we can concentrate on those key areas which require our skilled assistance to the patient, and we can leave to the patient those exercises which he can do for himself outside of the regular treatment period. We need the assistance of the patient in supplementing our treatment program with extra treatment exercise activities. We need his assistance also in avoiding activities which may accentuate the existing imbalance. Another point should be mentioned and that is — the muscle test is a working guide for the therapist who may do the follow up on our patient or assume our responsibilities in our absence.

Second, the muscle test is an evaluation of the program and the patient's efforts. Depending on

Assistant Director, Physical Therapy Department, Gonzales Warm Springs, Gonzales, Texas.

the diagnosis a certain amount of return of strength may be expected. If this expected return has not resulted, or has been haphazard, we must ask why. First we must look to ourselves and our program. Has our program been well planned and followed day by day? Then we look to the patient. Has he given his full cooperation? Has another problem or medical complication interfered? Whether the periodic evaluation shows a decrease or increase of strength, the progression or change of exercise, the increase or decrease of activity must be controlled objectively and intelligently.

As the muscle test is a definitive guide and evaluation of our treatment program so is the muscle test a definitive guide and evaluation to the patient in facing realistically and constructively his present physical situation and future possibilties. Some of his many questions are: "What will I be able to do for myself? How and when can I contribute again to my family?" Here, the physical therapist can help the patient to learn to make the best of what he has. Take the improvements noted, however little they may be, for they are one of the sources of encouragement for him. And that source of encouragement is direct and honest if, for example, we can say the quadriceps can extend the knee through one-half the range against gravity as compared to one-third the range previously noted, instead of saying it is better. How much better is the muscle power? We need to know that to plan an effective program and the patient wants to know. Often a muscle may not have shown improvement in functional activities but has shown improvement on the muscle test. This too is a source of encouragement in continuing the exercise program in an attempt to gain functional use. For the patient's sake, the muscle test must be skillfully done, must be definitive, must be repeated at regular intervals.

If a procedure is worthwhile, the same thought and care should be given to the recording of that procedure. By failing to maintain accurate records we deny the patient and ourselves first hand study material from which we can learn, and apply or adapt to other patients. We deny assistance to other members of the medical team who may do follow-up work with the patient. We also deny a source of an honest explanation of the patient's present status to his family. It must be remembered that the family too is going through a rehabilitation period.

Manual muscle testing is the technic of determining as accurately as possible the presence and strength of muscles against known controls: The known controls being gravity, and the manual resistance given after a muscle has reached the fair, 3, or 50 per cent grade. An understanding, appreciation, and skillful use of the fundamentals is essential to an accurate valid muscle test.

The basic tool for muscle testing is functional anatomy. How well do we know the origins and insertions? How well do we know the particular actions of the muscle, the synergic action, the antagonistic action, the stabilizing force of the muscle? What is the muscle's dynamic action in relationship to neighboring muscles in a given action? How well we know this, determines how well we will position the part for an effective test; that is how well we will know how to stabilize and support the weakness of the surrounding groups which, if unsupported would make the muscle being tested appear weaker than it actually is. That is how well we will know what substitutions may occur and how to avoid them.

All this cannot be done skillfully by observation of gross motion. Testing movements must be detailed, must be specific to be accurate. Wherever possible the skillful therapist palpates the muscle bulk in its contraction and relaxation to know exactly what the muscle is doing or not doing. Let us take for example forward flexion of the arm. Upon observation the patient executes a fair grade in bringing the out-stretched arm to shoulder level. But, upon palpation of the anterior deltoid we feel that the muscle may be contracting only through partial range, or not at all. Actually the pectoralis major, the long head of the biceps and the serratus may be producing the motion observed. This makes a difference to us in early treatment when we are attempting to bring to maximum functional capacity a particular action of a muscle. Failure to recognize substitution may further weaken a muscle as the secondary muscles become stronger in taking over the particular action of the weaker muscle. Like other skills it takes careful practice by the physical therapist who studies, compares, seeks constantly to improve himself in helping the patient to maximum rehabilitation.

How often have we heard a physical therapist say, "I can't do a muscle test," and yet that same physical therapist is responsible, in part or completely, for the patient's physical rehabilitation. Can we divorce good muscle reeducation from good muscle testing? The first step in reeducation is the muscle test. One poorly done will be followed by a poor reeducation program. The principles and the basic tools to good effective technic are common to both.

Let us go one step further. A physical therapist

may have the technical knowledge and skill to do a good muscle test but still fall short of the goal of helping the patient in his total rehabilitation. The patient is a person — a person with feelings, with responsibilities, with problems other than his physical disability. He is not just an accumulation of muscles. Sometimes we forget the patient and think only of our technic. We must know our patient, we must have his confidence and cooperation. Regardless of the extent of disability, it has been a shock to him. Whether or not we recognize it, the bewilderments and the fears are there when we first meet the patient. The psychological state of the patient will affect his response, and as a result the accuracy of the test. A good treatment program cannot be planned on an inaccurate test. If a past medical history is available it is our responsibility to read it before we see the patient to know his background and to learn what has been done in order that we may anticipate his reactions. Although we read the past medical history, we should keep an open mind. We should not fit our findings into the diagnosis. The diagnosis is tentative until the physician has complete evaluations, and the physical therapist's keen observations and testing may help clarify the diagnosis. So, from the first moment the physical therapist meets the patient he must be prepared to allay the patient's fear and apprehension and other negative responses which will affect the test and subsequent treatment program. The patient has been suddenly thrust into a physically dependent situation among strange people, strange ways, and his question is, *what* has happened to me, *why* has this happened to me, and what is going to happen to me?

After the getting acquainted session, we should explain the muscle test to the patient before we start — the approach and explanation will depend upon his age and understanding. We have started the patient into his first step of physical rehabilitation. We have his interest because he knows we are there to help him, but we have yet to earn his confidence and cooperation. Confidence and cooperation follow understanding. We need to help the patient understand each step which is being taken. If the situation permits, it is advisable to do the muscle test in several sessions. Most often, the patient is not up to long concentrated work. Detailed accurate testing takes time and even one-half hour of work may be too fatiguing. We need to work within the patient's tolerance, and we need to work within our own tolerance. Detailed testing is fatiguing to us too and in our fatigue we can become less accurate. It is advisable to first note joint range, tender areas, sensory disturbances, and other conditions which affect the total picture. When we begin the muscle test itself we will know within what comfortable range for the patient we can work, what positions can be assumed and still be effective for specific tests. Causing any unexpected, undue discomfort, or feeling of insecurity, can set up a defensive and even hostile reaction from the patient, thus delaying the mutual understanding and cooperation necessary for effective rehabilitation. Explaining each test as we do it will lay the groundwork for the exercise program to follow since muscle testing positions and reeducation positions follow the same basic pattern.

The patient is the focus of our rehabilitation program. Let us keep him in the center of our field of vision by using, and using correctly, the manual muscle test which can be an objective indicator, guide, and measure for us and the patient — only when we make it so.

Our Book Reviewers for January

Mrs. Elizabeth Barclay, Technical Director, School of Physical Therapy, Hermann Hospital, Houston, Texas.

Ben L. Boynton, M.D., Professor of Physical Medicine and Rehabilitation, Baylor University, College of Medicine, Houston, Texas.

Wilton Marion Krogman, Ph.D., Professor of Physical Anthropology, Graduate School of Medicine, University of Pennsylvania; Director, Philadelphia Center for Research in Child Growth, Graduate School of Medicine.

Ann Prochazka, R.N., Physical Therapist; Instructor in Orthopedic Nursing, Vanderbilt School of Nursing, Nashville, Tennessee.

Mary Jane Torp, Captain, WMSC, Staff Physical Therapist, Tokyo Army Hospital.

Functional Tests

Laura K. Smith, B.A.

Functional testing is the basis of functional activity as muscle testing is the basis for muscle reeducation. It is said that if a person cannot do muscle testing well he cannot do muscle re-education well. If a person does not know how to do a functional test or does not use it at all, then we can be safe in saying that he does not do a good job in functional activities. The aim of all treatment is independent function for the patient and if we do not know the requirements of this, our program will be haphazard and incomplete, and the patient will not derive full benefit from our services.

Functional testing is relatively a newly developed tool in physical therapy, and because it tests the desired end-result, which is to assist the patient to as nearly normal function as possible, it has been proven to be a valuable tool. The many other types of tests available (muscle tests, range of motion tests and electrical tests) are all important to evaluate the patient's physical disability and plan his program. The functional test is the *only* test we have that shows the sum of the parts *plus* that evasive X factor of age, weight, coordination, and interest. It can tell us where the patient stands, where he needs to go, and how far along that way he has gone.

The development of this testing device has been rapid and diversified with many people setting up different systems. This has been valuable but it has had a dertimental effect also in that the situation has become complicated and confusing, and the tool is not being used advantageously. Physical therapists can be divided into three groups: those who are not using the functional test; those who are misusing or not using the test to advantage; and a small group who really understand its purpose and use the test effectively. All physical therapists should become part of the last group.

Physical Therapy Supervisor in Education and Research, Southwestern Poliomyelitis Respiration Center, Houston, Texas.

Types Of Functional Tests

First let us analyze the purposes, needs and uses of functional testing. In general there are three types of functional tests — each with variations.

1. *Workmen's Physical Capacity or Physical Job Analysis Tests* are for those patients who are not so seriously disabled as to be dependent in daily activities, yet who are unable to perform their previous jobs full time. That is, they may be perfectly capable of dressing themselves or getting in and out of bed and walking, but they are unable to stay on their feet all day or to lift heavy weights. It is not enough for us as physical therapists to perform our usual functions of decreasing pain and increasing range of motion and strength, and conclude that the patient is cured. It is our responsibility to find out what his regular job demands. How much continuous weight bearing, lifting, climbing, reaching will be required? We can find this out and measure the patient's ability most accurately by the use of available tests. Then we must provide either the opportunity to increase ability in deficient factors or we must stimulate the patient to do so. We have failed if a painter who has had a sub-deltoid bursitis has been returned to 'normal' through definitive treatment but is unable to hold his job. We cannot always blame him for malingering, but must assume a responsibility for our own lack of direction.

2. *Daily Activity Tests* are for those who are so severely disabled that they are unable to be independent in their physical environment. It is only by accurate testing that we can really assess the patient and exploit the fine points of rehabilitation. Many patients think they are independent and often we feel that they are, or should be, but when we do an accurate test we find that the patient is able to get into bed by himself only *if* someone "just" holds his chair. *This* is not independence. Failure to use this test may mean that we miss many small, but

important factors which mark the difference between dependence and independence.

3. *Motor Development Tests for Children* are the third type. Usually the other tests are not suited to children under five. First we must know the normal abilities and coordination of children of this age and check the child's abilities against these. In this way we shall not expect a child of four to tie a double bow knot, but we shall expect him to be able to crawl and walk at that age.

VALUE OF THE FUNCTIONAL TEST

The value and purpose of these tests are important to many people, the first of which is the patient since it gives him a clear cut picture of his physical status and his desired goal. It helps him to organize his thinking and to take steps one at a time rather than be overwhelmed by the immensity of his needs. For many patients the test comes as a revelation. Some are pleasantly surprised to find that they are able to do more things than they thought they could. Others find that they are really not as capable as they felt they were.

The second group to whom the tests are important include the physician, the physical and occupational therapists, who are responsible for planning and carrying out the patient's program. These tests are objective measures of the patient's capabilities and progress. The test gives them an over-all evaluation of the results of the various technics and appliances that have been used, it serves as an aid in planning the program, and very importantly it gives them a check list so that all items necessary for independence are stressed. The functional test cannot be used alone, but with other tests plus judgment it gives a more complete picture of the patient. It is one of the most valuable assets in demonstrating our contribution as it is in tangible terms that everyone understands.

Third, the ward nurse can find the test helpful since it describes what the patient can and cannot do. Thus she can encourage him in certain activities but will not expect him to perform others merely because the boy in the next bed can do them.

Fourth, the social worker can utilize the test to interpret the capabilities and needs of the patient to the family, the school, and any social agencies to which the patient may be referred. It is helpful also in preparing for the patient's return home and planning physical adjustments within the home.

Fifth, the vocational counselor can use the test to check the physical demands of a proposed job. Without a test or, worse yet, with an inaccurate test, the counselor and the patient may be placed in an unfortunate situation. Not only has that patient lost the job, but the employer has become disgusted and refused to employ other physically handicapped persons.

REQUIREMENTS OF TESTS IN GENERAL

There are several requirements that are common to all three types of good functional tests. All necessary items for independency or normalcy need to be represented, yet the number of items should be practical and workable. Since these two are not always compatible, a compromise must be made whereby the items are basically representative of other equally important activities. For example, we do not put in a test all the types of chair situations that a patient may experience such as arm, sofa, one arm, folding, straight back, but pick the most difficult one — which is getting in and out of a straight chair that is not supported. It is felt that if the patient can perform this activity, he can manage any type of chair situation.

The grading system should be clear, graphic, and measure degrees of progress. At present there are at least six different methods of grading, each with innumerable adaptations.

When administering the functional test we need to understand the purpose of the test. In itself it is not a teaching procedure, nor is it a lollipop reward for effort any more than giving a Good grade to a Fair muscle. It *is* a measure of what the patient can do by himself without the assurance that someone is going to catch him if he does not make it this time.

CONSIDERATIONS OF PHYSICAL THERAPISTS IN FUNCTIONAL TESTING

What can we do to improve and increase the use of this valuable tool that is available to us? First, if you are not now using this technic, consider the loss to the patient and to your program. One of the often mentioned objections to using the functional test is that it is time consuming and requires much equipment. What if the initial test does take one or two treatment periods; the value of the test in most instances is far greater than the loss of treatment. From there on, re-testing is a part of treatment and takes very little time. Equipment need not be special in most instances, for it is the same as that used in training. There is rarely a physical

situation where most activities cannot be performed. If one knows the test, the progression can be planned so that there will be a minimum of time and energy wasted. Check up on the available tests, choose one to fit your needs, consider the purpose of the test and use it accordingly.

If you are not using the test to advantage, it is suggested that you reconsider the purpose of the test. Do not use it as a gold star for achievement, but as one of your objective measurements. Be as sure as possible in your mind that the patient can do the activity well and under any circumstances, that is, by himself out of your protected environment, and with other than your selected and perfected equipment. Do not use the test as just a measure of functional training, but use it early in the patient's program so that you have a total measure of that program. After all, muscle reeducation and stretching contribute to function —not just functional activities per se. Also remember the tests cannot be of value if you sit down and ask the patient what he can and cannot do, or assume that he can or should be able to accomplish the activities. Very often the patient is not aware of details, and assumes that he is independent if he does most of the activity. You cannot do a functional test from an armchair anymore than you can do a muscle test without working directly with the patient.

Those who have been instrumental in developing tests and those who are using tests to their fullest advantage have a responsibility in attempting to work toward standardization so that it can become better understood, accepted, and used. The use of this tool has been limited by the belief that it is diverse, complicated, and confusing. Under these conditions it is difficult to present the material adequately to students.

We need a standardization of items and grading systems. This is more difficult than in muscle testing, but it can be improved. A uniform grading system should be established which would basically fulfill the many criteria. It needs to be clear and uncomplicated so that the many people involved can use the test without first taking a course of instruction. Doctors and nurses cannot be expected to interpret involved hieroglyphics. The grading should be objective and standardized so that the physical and occupational therapists giving the test all have a knowledge of what is meant. It needs to measure degrees of ability; if it indicates only independence or lack of independence, it leaves out the large group of patients who have become semi-independent with adapted equipment or who function with the help of an assistant.

The items themselves can be standardized so that we know how much is included in any activity. We need a manual which will list the equipment needed, requirements of the activity and standards of performance. In this way we could know, for instance, that a test item, "ascending stairs with a handrail," stands for the ability to do any height of step with or without overhangs, using the handrail on either the right or left side, starting and ending in the position of locomotion, carrying all necessary equipment, and with enough endurance to be able to move away and do other activities.

By striving for uniformity and standardization we can bring more objectivity into functional testing and remove much of the subjectivity. At the same time we can help immeasurably to promote more universal use.

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The Importance of the Therapist as an Influencing Factor in Rehabilitation

Lorraine Willer, B.S.

In order to discuss physical therapy and its place in a patient's rehabilitation, it is necessary to talk about a most important influence — the therapist.

The period of rehabilitation from definitive treatment through functional may be a long period of time or it may be a short one. It may be taking place in a departmental institution or in a private clinic where the doctor, patient, and therapist carry on the entire rehabilitation program. No matter what the length of time or the place, the therapist is frequently the one person who sees the patient most often and who is in the best position to know the patient and his needs. The lines along which rehabilitation will follow will depend, to a great extent, on the therapist. Therefore, let us consider patient rehabilitation in relation to the therapist and discuss; 1. His personality and character; 2. The effect of his personal interest; and 3. The application of his professional knowledge.

We as physical therapists, belong to a service profession which aids people in overcoming various disabilities. Our work covers a large area and includes many different types of working set-ups and many types of people. If we are to give our patients the best type of treatment possible, it is essential that the therapist know himself well — his capabilities, his limitations, and his personality — and, have complete command of himself. A patient reacts to a therapist in some manner and so does the therapist to the patient. If good results are to be obtained, there must be cooperation between these two and this can be done more easily if the therapist is happy in his profession, his employment, and if he is willing to give of himself to the interest of the patient. Therapists are as individual as the patients they treat and have their own distinctive manner of approach. It is as important that he practice in a setting that fits his personality and his capabilities as it is to see that the patient gets the correct physical treatment. A therapist having the preparation and disposition to work with children may be handicapped in working with adults. Or, a therapist who enjoys working with many associates might be unhappy working alone.

The adjustment of the therapist will be mirrored in his approach to the patient and to the treatment given. If there is friction between therapist and organization, it would take a superhuman being to keep that fact from the patient. Patients seem to be hypersensitive when their interests are the main issue. If the therapist is obligated to take care of their needs by virtue of holding down a job the patients will react accordingly. Personal reactions, tensions, and anxieties are also factors of great impact. The therapist is not asked to resign from the human race in order to practice physical therapy but his personal reactions toward the patient and toward outside factors must be kept in the background as much as is humanly possible. This does not mean that emotion is to be eliminated entirely — some emotion is essential when dealing with people. Too much emotion is detrimental for it leads to instability and resentment — factors which are hard to combat once they are present. Because we are working with people who react to us, the presentation and progression of work must be carefully gauged. When the needs of the patient have been established, the attitude toward that patient must be determined by the therapist in respect to his own personality — that is, how he can stimulate that patient to give of his best toward the problem at hand. Some patients require a pat on the back, others a command, and still others merely have to know the reason—a sharp word to the wrong patient may cause irreparable damage, whereas

Physical Therapist, Dallas Medical and Surgical Clinic, Dallas, Texas.

a velvet-covered whip to another will be the means to the end result. The therapist must sublimate his own problems so that his approach to the patient can be unclouded and objective. The therapist's individual personality should be controlled, rather than thwarted so that the patient will feel support, authority, and above all, that he, personally, is of great interest to the therapist.

We all have a touch of egotism and a patient most of all — he thinks his disability is unique in spite of the fact that it may be one in a field of many. Nevertheless, to him it is of prime importance because it is affecting his life. As therapists, we must convince him that he is equally as important to us. If we cannot do so, treatment will not produce the most desirable results. Rehabilitation begins in the mind; before there can be movement, there must be the desire to move. The therapist must provide incentives to carry on activities as normally as possible and in a good many instances prove that activity is possible. In order to do this, it is necessary to know more about the patient than his physical complaints. The body operates as a functional whole; if one part is functioning improperly — or not at all — it will affect the whole. Besides its direct effect on the body mechanism — psychological factors cannot be overlooked and must be understood and considered in the treatment. For example, the patient may fear that the extent of his injury will affect his earning power. He may have misconceptions about what the treatment will involve. Home tensions may be present and play an important role. His attitudes about people and various events as they pertain to him may prove important. Many other factors, will effect the patient in some manner during his period of rehabilitation. His problems must not be slighted; but whether or not we must deal with them personally will depend on the scope of our delegated duties. It is possible that his physical problem may be of secondary importance and that physical therapy must be drastically modified because of it. On the other hand, a rigid physical therapy program may be the answer to his problem.

Certainly there is a challenge, for physical therapy deals with problems of motion and motion is the means by which the environment can be altered. According to Aristotle, "Movement is Life." It is, therefore, possible that physical therapy can produce a wide-reaching effect. It stands to reason that any movement will produce an effect but the question is, "What effect will the movement have on the patient?" In order to come close to an answer, we must know the patient as a person. All too frequently this is an idealistic attitude not practised. Its application may very well control the results.

In order to understand a patient, various sources of information are available. In a departmentalized institution, there are the reports of the various services; in a large associated clinic, there is the advantage of discussion; but the one source we all have is the patient himself and it is the rare person who doesn't like to talk! Just from listening, a great deal can be learned about the patient as to his background, his desires, his problems, and his likes and dislikes. The therapist, must associate these things with the object of rehabilitation. Because he is in a position to view the entire situation with an unprejudiced eye and attitude, the therapist can aid the patient in many ways in addition to helping him with his physical problem. The therapist-patient relationship should be one of mutual confidence. The attitude of the therapist is important but it must be reinforced by a well-rounded professional knowledge in order to be successful.

Physical therapy is by no means a standard form for overcoming obstacles either of motion or of emotional origin, but the physical therapist must constantly seek to devise ways and means of overcoming them. In order to accomplish this task effectively, the individual needs of each patient must be considered since one technic will not fit every patient. The fundamentals of physical therapy studies present the essential framework, but the understanding of all ramifications of treatment requires experience — experience gained through courses in specialties, through research, or through longtime clinical work and observation. It takes more than formal education to develop technics and skills to their full advantave — it takes maturity and flexibility on the part of the therapist. To know when and for how long to carry out an activity is something that cannot be learned from a book — it takes a knowledge of people gained by living and working with them. There are times when a discussion far afield from the patient's disability will prove more effective than the actual treatment itself. To establish a level of mutual interest will add considerable value to his treatment. His cooperation is essential for good results, and approaching the problem from his point of view makes the job more satisfactory. An education combining a strong liberal arts background with a sound professional knowledge makes for a versatile therapist, and as a consequence, for a congenial atmosphere. The patient will benefit

from both for he is the one who actually carries on his own rehabilitation, and the therapist who aids in making the intervening time of value and of interest. The important thing, from the standpoint of the patient, is that the therapist's knowledge is beneficial only as it is applied to his individual case.

In conclusion, I should like to say that, in my opinion, the above three factors — therapist personality, personal interest, and applied knowledge — are the most outstanding influences on the patient from the standpoint of physical therapy, but they are by no means the only ones. Many other factors enter in and must be considered. The truly successful therapist is the one who takes all the factors into consideration when planning the physical therapy program, and does not allow himself to become an automaton. He takes the time and makes the effort to know his patients and their needs and is willing to take initiative. I would never attempt to tell anyone how to treat a patient but I would ask, "Are the patients getting treatment that suits their individual needs?"

Rehabilitation: The Vocational Aspects

Eugene J. Taylor, M.A.

It is logical that the final paper in this symposium on rehabilitation should deal with the vocational aspect of rehabilitation, for just as good medical and surgical care is the foundation of good rehabilitation, successful placement on the job is the capstone or end objective of rehabilitation. Employment *per se,* however, is not the only valid goal of rehabilitation, for there are many patients whom age, extent of disability, or economic circumstances will prevent from returning to employment. The ability to care for one's self and to do productive work even though it may not involve financial compensation are valid rehabilitation goals medically and socially for their effect on the well-being of the person and economically in that personnel and operating costs of institutions or the patient's home are thereby reduced.

Although all of the various skills and disciplines which make up the rehabilitation team are essential to the rehabilitation process, physical therapy is the core or central discipline around which the other disciplines revolve in the rehabiltation of most physically handicapped persons. Since the primary objective of physical therapy in the rehabilitation process is the restoration of function, the activities and approach of the other members of the rehabilitation team will be largely determined by the degree of success achieved in the restoration of function. The vocational counsellor may and should start counselling with the patient early in the treatment of his disability, but he cannot be specific with the patient until he has some rather definite indication of the degree of functional ability which the patient will achieve. Similarly, in social work, there are some aspects of the patient's social problems to which the social workers efforts can be directed early in the treatment-training period, but again the real social problems of the changed relationship of the patient to his environment will come into sharp focus only when the social worker has some idea of what the residual functional abilities of the patient may be when maximum physical rehabilitation is achieved.

It is, therefore, essential that the functional ability of the patient be determined objectively and that this information be transmitted to the other members of the rehabilitation team in terms which are meaningful and purposeful. The importance of simple, but meaningful terminology cannot be overemphasized. In some fields, such as psychiatry and social work, which deal particularly with abstract concepts, there has been some justifiable criticism that these disciplines speak "a language of their own" and that their findings and contributions, even though they are of extreme importance, cannot readily be utilized by other members of the rehabilitation team. There is no excuse, however, for

Assistant Professor of Physical Medicine and Rehabilitation, New York University College of Medicine; Staff, The National Society for Crippled Children and Adults.

physical therapy to develop a jargon of its own, for physical therapy deals with concrete, objective findings, recommendations and procedures which can be stated in simple, easy-to-understand terms.

It is readily understandable why the area of functional testing and evaluation has been slow in developing. Medicine, and particularly industrial and insurance medicine, has been concerned with this problem for many years, but, as yet, has come up with no satisfactory answer as to how to determine just what any given person can do.

As a substitute for objectivity, we have long used in insurance, pensions, and other programs in which there are financial aspects of physical disability, a system of percentages. We still say that a veteran is 10 per cent, 20 per cent, 50 per cent, or 100 per cent disabled, yet we know that these terms are really meaningless. Instead of being able to evaluate a veteran's physical disability objectively, and then make a financial award to him on the basis of his functional abilities, the procedure usually in practice works in reverse. Those in charge of such awards probably decide subconsciously that the disabled man "should" get a certain sum and then his disability is rated on a percentage basis to permit qualification for that sum.

When medicine was under the influence of the anatomical concept of medicine a few decades ago and competence was measured in terms of anatomical perfection, rating disability in percentage terms was a reasonably adequate procedure. As the Task Force on the Handicapped to the Office of Defense Mobilization has pointed out, "At that time a man was either fit or unfit for work depending on whether or not he was anatomically whole. It was all or none. A man could do the whole job or none of it. He was disabled for all work, if he was disabled for any part of it."

With the development of the physiological or functional concept of medicine and the specialization and subdivision of jobs into their components, it became increasingly apparent that the percentage approach to the evaluation of disability was not practical. To meet the need for more definitive information to be used in the selective placement method whereby the physical capacities of the individual are matched to the physical demands of the job, there was need for new methods of objectively analyzing and listing both the physical capacities of the person and the physical demands of jobs. Industrial medicine and employment services then began the system of describing physical demands of jobs and physical capacities of individuals in terms of certain standards of performance in standing, walking, running, stooping, crawling, climbing, reaching, carrying, and so forth.

Now in the field of functional testing in physical therapy, we are concerned with greater refinement of this method in order again to be more specific. In comparison to the more highly developed areas of testing of joint range of motion and muscle testing, our technics of testing functional ability are still fairly crude. Since the testing of functional ability relates to the gross ability of the individual to perform certain tasks involving a variety of skills and abilities, functional testing will probably never reach the same high degree of objective measurement which is possible in the testing of joint range of motion. The high degree of standardization, however, which has been achieved in manual testing of muscle strength and is dependent upon the subjective opinion of the therapist, demonstrates that uniformity of testing procedures, ratings and terminology is possible. Today, when a manual muscle test is performed in a hospital or clinic in one part of the nation by a trained physical therapist, the written report of the test has meaning to all trained therapists. As has been previously pointed out in this symposium, however, when a functional test is given, the results as indicated on the test chart have little meaning except to therapists who have been trained at a particular school or who have worked in a particular program. Today, there are some six different types of functional tests being used in this country with six different methods of rating and six different test forms with the result that the test charts can be interpreted in about 66,666 different ways.

That we have developed so many different forms of functional tests in different parts of the country has probably been a healthy thing, for it has meant wider participation, greater experimentation, and a broader base of development. We now have passed the development stage, however, and the current need is standardization of these procedures utilizing the best of all the systems which have been developed.

The degree to which the physical therapist may become involved in specific job planning and placement of a handicapped person will vary considerably and is dependent upon the treatment setting. In some general hospitals concerned primarily with definitive care, there may be little or no responsibility. In some large rehabilitation centers where vocational counselling and job placement is an integral part of the rehabilitation process, there will be responsibilities but they will be met indirectly through

the rehabilitation or vocational counsellor. In some small centers, the physical therapist, of necessity, may assume a major responsibilty for this as well as many other services. All, however, can and should utilize the services which are available from the State Divisions of Vocational Rehabilitation, State Employment Services, and community vocational counselling services.

In all instances, the therapist should be equipped to provide the physician, the counsellor, or the job placement agency with an objective evaluation of functional ability that can be easily understood. Knowing the physical demands of all of the thousands of jobs that exist is not your responsibility. That lies within the province of the vocational counsellor or job placement specialist. It is your responsibility to be able to give the vocational counsellor or job placement specialist, specific, objective data based on performance of the functional capacities of the patient.

Although you, as the physical therapist, do not bear a direct responsibility for the actual vocational guidance and planning *per se* of the patients whom you treat, your relationships with the patient in the therapeutic setting have immeasurable influences upon him and his attitude toward his disability and through this you indirectly influence both the patient's choice of his future vocation and his prospects for vocational success in that choice.

Equally important to the patient's physical ability to meet the physical demands of a given task are his abilities to meet the emotional and social demands. Some authorities have reported that in cases of job failure, only 20 per cent of such failures are attributable to the inability of the person to meet the physical and technical demands of the job — the other 80 per cent of job failures result from inability to get along with supervisors or fellow workers.

As Dr. James F. Garrett has pointed out, "Too frequently those who have had prolonged illness or hospital stay convalesce physically but not psychologically. When a good rehabilitation viewpoint is not maintained, most patients become debilitated psychologically. . . .It is not uncommon for a patient in the course of hospital routine to become egocentric, hypochondriacal, dependent and regressive, and these are four excellent reasons for failure on the job. These personality habits do not clear up automatically as the patient improves physically or as he is discharged from the hospital. Children do not achieve independence in one leap but only as a gradual process under the wise guidance of parents and others to whom they are entrusted. So it is with patients. Unless we alert ourselves from the beginning to these psychological dangers inherent in medical treatment and take active steps to counteract them, our patients may achieve good physical results but have psychological sequelae."

Your attitude toward the patients with whom you work plays a great role in their determination of their own attitudes toward their disabilities. One of the greatest values of a rehabilitation program is the fact that numbers of disabled persons are brought together and have the opportunity of gaining insight and understanding as well as technical knowledge from each other. In the well-run rehabilitation program, a milieu is created which reflects a spirit of realistic optimism and as the patient is influenced by his environment, his own attitudes toward his disability tend to follow those of the group of which he is a part. As Anna Rogal has pointed out, even though the therapist cannot motivate the patient directly, she can do much to create a setting in which he can be encouraged and even enticed into motivating himself.

When the "physical therapy technician" reaches the stage of insight and understanding that he is able to influence the patient's reaction to and acceptance of his disability objectively, he is no longer a "physical therapy technician." He then becomes a therapist in the true sense of the word therapy. Physical therapy then becomes the treatment of the patient rather than the disability.

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The Film Terminal Syndrome (The Cord-Traction Syndrome). George J. Garceau, J. Bone & Joint Surg., 35:711-716, July 1953.

A Study of the Action at Varying Lengths of Two Muscles of Opposing Function, Tibialis Anterior and Gastrocnemius in the Rat. Albert Barnett Ferguson, J. Bone & Joint Surg., 35:741-745, July 1953.

Improved Type of Hip-Disarticulation Prosthesis. Charles G. Hutter, J. Bone & Joint Surg., 35:745-748, July 1953.

Properties of Pyramidal Tract. P. O. Bishop, D. Jeremy and J. W. Lance, J. Neurophysiol., XVI: 537-550, September 1953.

Cerebellar Increase of Postural Tonus after Deafferentation and Laybrinthectomy. C. Terzuolo and H. Terzian, J. Neurophysiol., XVI:551-561, September 1953.

Hearing Impairment in Cerebral Palsied Children. William G. Hardy, Cerebral Palsy Review, 14:3-7, September 1953.

Editorials

Periodically, new terms or slogans attract our attention and become part of our everyday vocabulary. One of these expressions is "work simplification." Whether it be in education, industry, government or the professions, its value has become widely recognized.

Although we have not known it as such until recently, the principles and technics of work simplification have been applied in physical therapy for many years. Examples of this fact include the considerable research that has been done by our Association as evidenced by such publications as the "Job of the Physical Therapist" and the painstaking analyses of the steps in rehabilitation along with the construction and teaching in the use of suitable facilities and equipment for the disabled. At best, we have only scratched the surface as to the possibilities of this interesting and profitable study known as work simplification.

Work simplification seeks the more effective use of manpower, equipment, materials, and space. It is the common sense system of technics for determining the one best way of producing the desired results with the least possible expenditure of time, energy, and material. There are numerous technics of both formal and informal types which can be used to improve work methods. The time spent in each activity by each worker can be tabulated to show total man hours. Motion economy may be studied to indicate efficient work with a minimum of energy expenditure. Another approach is to record the steps involved in any given procedure in order to discover the presence of duplication of effort or hindrances to production. Relationship studies between the volume of work accomplished and the methods, and between the work facilities and the methods often prove to be most lucrative. Whatever the technic used, there is an attempt to eliminate the unnecessary, combine where practical and make changes if indicated.

Since physical therapy involves equipment, space, and the human element of staff members and patients, and since it requires an unusually high energy level, it would appear that a conscious effort in the direction of elimination of waste motion and inefficiency in the use of equipment and procedures could bring favorable results. A few of the countless areas where a study in work simplification might be of benefit are suggested: Better placement and equipment and materials such as linen, oil and alcohol, bandages, hampers, tables, sinks, and electrical outlets; more careful planning of ward schedules to save the retracing of steps and the unnecessary moving of equipment, improved organization of routine administrative duties such as phone calls, correspondence, record keeping, conferences and scheduling of patients, and the more effective delegation of tasks among the professional and nonprofessional workers in order to use their abilities to best advantage in the accomplishment of routine clinical duties and treatments.

Physical therapists initiating a program of work simplification will do well to keep two important factors in mind. First, the determination to make a change must be based on facts not opinions. There must be a careful analysis of the existing system to make sure that the new method actually is going to make for greater technical efficiency, increased staff satisfaction and more effective patient care. Second, it must be remembered that it is a natural human quality to resist change. Any change should be instituted slowly and the reasons will require careful explanation to those who will be affected. Continual reassurance usually is necessary during such periods.

Joint planning, evaluation, and participation in the carrying out of the program by the staff will help to assure the success of the undertaking.

The emphasis in any work situation should be on why one should not try something new rather than why one should. Work simplification with its many advantages is a challenge and a wide open field to every physical therapy department.

Association Activities

Summary of Minutes of Semiannual Executive Committee Meeting

November 18-21, 1953

New York

All members of the Executive Committee were present as well as the professional staff of the National Office.

At the first meeting on Wednesday morning each of the professional consultants reported on current and future projects. In the afternoon the Committee met in the National Office. At this time each officer and director had an opportunity to learn more about the work and projects of at least one division—Executive Director, Chapter and Membership Services, Professional Services, Education, Recruitment, and *The Physical Therapy Review*. During the ensuing meetings, the Committee discussed proposed bylaw changes which will be studied further prior to presentation to the members; heard ad hoc committees; and discussed and made recommendations on other Association activities.

Personnel Policies

A revision of personnel policies for physical therapists as recommended by the Association was authorized. The major change was in annual salary scales which will read:

Junior Staff	$3,600.00 — $4,000.00
Senior Staff	$4,200.00 — $4,800.00
Supervisor	$5,000.00 — $6,000.00

Second Congress of the World Confederation for Physical Therapy

It was voted to hold the 1956 Conference in New York City at which time the Association will be host to the World Confederation for Physical Therapy. A Congress Committee for initial planning was appointed with Catherine Worthingham as Chairman.

Committee to Study the Nature and Function of the Department of Education

Margaret Kohli, Chairman, presented recommendations. In line with their suggestions an Advisory Committee to the Department of Professional Education consisting of six members was created. At least 50 per cent of this committee will be physical therapy directors from the approved schools.

Committee on Examinations for Legal Registration and Membership for Members of Physical Therapy Organizations Affiliated with the World Confederation for Physical Therapy

Dorothy Hewitt reported. The examination for legal registration to be used by state examining boards has been completed by the Professional Examination Service of the American Public Health Association and is now available for purchase. Florida was the first state to purchase the examination.

The Executive Committee authorized an appropriation of $2,000 to complete the examination for foreign trained — this sum to cover committee expense and the services of the Professional Examination Service.

Ways and Means Committee

Dorothy Fredrickson, Chairman, reported the committee's findings which suggest future development at the national and chapter level. The

Steering Committee (President, Vice President, Speaker) of the Executive Committee was charged with reviewing and establishing projects of the Association which need financial support.

Committee to Recommend Educational and Experience Qualifications for Physical Therapists in Public Health Programs

Clara Arrington, Chairman, has transmitted this report to the American Public Health Association and complimentary acknowledgements of it have been received.

Committee on Functions of Nonprofessional Assistants

Viola Bryson, Chairman. A meeting of this committee was authorized to prepare a report for publication at an early date.

Finance

The financial status of the Association was reviewed and thoroughly discussed at which time it was considered necessary to continue operations within a deficit budget in order to modestly increase service to members. This deficit, however, is approximately one-third less than anticipated in June.

An Advisory Committee to the Department of Professional Education with Dorothy Fredrickson as Chairman, was created. Other members of the committee will represent a national agency, a local official, a local private agency or hospital, and an educator. The President, Executive Director and Professional Services Consultants will serve ex-officio.

An Advisory Committee to the Recruitment Consultant was created to include the members of the present Recruitment Steering Committee plus two other members.

Insurance

It was reported that as of November 17th, 329 individual policies had been issued under the group health and accident insurance plan.

Professional Liability Insurance was discussed in relation to the feasibility of endorsing a group plan. It has been determined that the premium for such a plan would cost more than individually issued policies and therefore be of no advantage to the membership. It was however considered desirable, as a service to the members, to approach the National Rating Board regarding the possibility of a reduction in insurance rates for physical therapists who work only under medical prescription.

Committee on Nominations

Corrine Way was appointed to serve the unexpired term of Maxine Schuldt who resigned.

1954 Conference — The Committee on Program submitted a proposed outline for the scientific program which was discussed and tentatively approved.

House of Delegates

The officers of the House of Delegates held a separate meeting to provide for a mail vote by the House of Delegates early in 1954 and to plan the 1954 annual meeting.

DOROTHY E. VOSS, *Secretary.*

Federal Legislation

Mrs. Frances P. Bolton, congressman from the 22nd District, Ohio, is considering drafting a bill which would amend the Fair Labor Standards Act to provide that equal wages shall be paid for comparable work, regardless of the sex of the worker.

Federal equal pay bills have been introduced in every Congress since 1945 but no bill has become law. With the labor statistics of the U. S. Labor Department indexes showing a labor force of 64.7 million with 19.8 million of them women, there would be 31 per cent of the working population affected by such legislation. Of these working women 2.1 million have children below school age, and 3.2 million more have youngsters under 18 years of age.

In the course of a most exhaustive study of the subject, Mrs. Bolton has sought the advice and guidance of hundreds of leaders in labor, industry, education, and women's affairs. The replies indicated (1) an almost unanimous agreement with the principle of equal pay, and (2) a predominant majority in favor of a Federal law to enforce it, Mrs. Bolton states. Heads of business, industry, financial associations, and deans of business administration colleges, while endorsing the principle of equal pay, were divided on the proposal for a Federal law.

The American Physical Therapy Association endorses the principle of equal pay for equal work regardless of the sex of the worker as described in Mrs. Bolton's proposed bill.

CAROLYN BOWEN,
Public Laws Committee

SEE YOU ON THE

BLUE PACIFIC SHORE IN '54

Aloha nui oe!

Los Angeles, 1954

When you come to the blue Pacific shore in June of '54 El Pueblo de Nuestra Senora de Los Angeles de Porciuncula will be your destination. From jackrabbit land to third largest metropolitan area in one hundred years is the record of Los Angeles—miracle city of the West.

It is a cosmopolitan city—its atmosphere of Spain blending with a touch of the Orient, a whiff of Paris, and a dash of the old West—all wrapped up in modern American trimmings.

Los Angeles is edged on the west and south by the Pacific, where gentle breezes sway the palms along its glistening beaches, and where on June nights the fragrance of exotic blossoms fill the air. It is bordered on the north by mountains; here, Old Baldy rises majestically to 10,080 feet. On the east, orange groves, vineyards, rolling hills, and ranches add beauty to the many small

industrial and agricultural communities that form a buffer between the City and the Desert.

Los Angeles is waiting to welcome you. City, seashore, mountains, desert, offer a fabulous vacationland to suit anyone's taste.

Sightseeing, shopping, swimming, fishing, boating, hiking, exploring, prospecting, learning or just plain loafing, all are possible and within easy reach of the Los Angeles Statler Hotel—your headquarters from June 27 to July 2 when you come to the blue Pacific shore in '54.

Chapter News

New Jersey

The following report for 1953, taken from the November chapter newsletter, is an excellent example of the type of activity being carried on by many chapters.

Since recruitment has become one of the most important aspects of our organization's program, a separate committee for this purpose was formed in the middle of last year.

The Committee sponsored a Physical Therapy Day in New Jersey on May 15th. Open House was held at 19 centers so that students could see physical therapy in action; 255 schools were notified. This included high schools, private and preparatory schools, junior and senior colleges, and nursing schools.

Press releases were sent throughout the state and radio stations were contacted. Approximately 120 students took advantage of the Open House.

The plans for the coming year include showing the new recruitment film and talks on physical therapy at the various high schools in the fall and another Open House in the spring.

DANIEL STRULOWITZ, *Chairman, Committee on Recruitment.*

Tennessee

The National Medical Association conducted its 58th Annual Convention with Meharry Medical College as its host, August 10-14th. The Department of Physical Therapy cooperated with the local chapter of the American Physical Therapy Association to sponsor an exhibit on "Rehabilitation of the Hemiplegic in the Home." Pictures illustrating various methods and procedures in general physical therapy and polio were secured from various institutions. These served as a background together with charts loaned by the National Headquarters of the American Physical Therapy Association showing the distribution of physical therapists in the United States.

Virginia

The chapter sends copies of its newsletter to physical therapists in the state who are not members and is stimulating interest in membership by requesting comment from these persons.

From the newsletter: Are you not a member of the APTA? Then we need you. If all of us were 100 per cent organized, we could solve state problems more readily and completely, recruit more physical therapists, have "bigger and better" meetings, etc.

Or, even if you have paid your dues, are you really active? It takes more than money to have a progressive state organization.

Or, maybe you come to meetings. How about helping out on some of the committees? The Chairmen are all in need of your assistance. Write them your suggestions—or volunteer your services today.

Just in passing—how do we compare with our allied profession—Occupational Therapy? They report about 80 per cent State membership and at every meeting there is *at least one* representative of every State Institution that has an O. T. Department.

How active are you in your professional organization?

RUTH M. LATIMER.

Wisconsin

Volume 1, Number 1, of the Wisconsin Chapter Newsletter dated September 1953, is the third in a series of worthy predecessors starting with the "Home Town Thistle Down News" in January 1931.

The new series is a twelve-page folder type format subsidized by the Burdick Corporation. It is illustrated with recruitment photographs, a reproduction of the Association's recruitment poster and a particularly discerning series of light single cartoons depicting "a day in the life of a typical physical therapist." In addition, it contains a report from the Conference, minutes of the last Chapter meeting, and Chapter Committee reports.

Congratulations are in order.

WORLD CONFEDERATION FOR PHYSICAL THERAPY *News*

Report of First Congress of The World Conferedation for Physical Therapy London, England — September 6-12, 1953

To report to you, the members of our Association, the chronological events which comprised the program of the first Congress of the World Confederation for Physical Therapy would be a comparatively simple assignment; to successfully record for you the spirit that pervaded this gathering and the qualities, both tangible and intangible, that were responsible for the brilliant success of the Congress is quite another thing. The Executive Committee and the Program Committee of the World Confederation and the Chartered Society of Physiotherapy have indeed established a precedent and set the tone for the future activities of this world organization which will be an imposing challenge during the years to come.

A spirit of international friendliness and good will predominated everywhere. The traditionally British touches of formality and ceremony added dignity and inspiration to both the professional meetings and the social events. The charming hospitality and graciousness of our hosts gave warmth to all occasions. The caliber of the scientific program was high and the prestige of the Chartered Society in the British medical world was evidenced by the distinguished physicians who participated in the program.

Special religious services, conducted on Sunday at St. Paul's Cathedral and Westminster Cathedral, were an inspirational prelude to the impressive ceremonies of the following day when the Congress was officially opened. To set the stage for a description of this opening session I am including in this report the imposing list of dignitaries gracing the platform on this occasion.

Opening Ceremony — Platform Party

Front Row

Sir Harry Platt, M.D., M.S., F.R.C.S.
President, The Chartered Society of Physiotherapy

Mrs. R. Agersnap (Denmark)
3rd Vice-President, World Confederation for Physical Therapy

Miss W. M. McAllister, M.B.E., M.C.S.P.
1st Vice-President, World Confederation for Physical Therapy

Sir Cecil Wakeley, K.B.E., C.B., F.R.C.S.
President, Royal College of Surgeons

The Rt. Hon. Iain N. MacLeod, M.P.
Minister of Health

Professor J. Whillis, M.D., M.S., F.R.C.S.
Chairman of Congress

Miss M. Elson, (U.S.A.) President
World Confederation for Physical Therapy

Dr. K. Harris, M.D., F.R.C.P.
Senior Censor, Royal College of Physicians

Mrs. S. Coleridge (Sweden)
2nd Vice-President, World Confederation for Physical Therapy

The Rt. Hon. Lord Webb-Johnson, K.C.V.O., C.B.E., D.S.O., T.D., F.R.C.S.
Past President, Royal Society of Medicine

The Rt. Hon. Lord Horder, G.C.V.O., M.D., F.R.C.P.
President, International Federation of Physical Medicine

Second Row

Lt.-Col. Norman Edwards, M.B.E.
Deputy Mayor of Westminster

Miss P. Barron, M.C.S.P.
Vice-Chairman, Chartered Society of Physiotherapy Council

Mrs. U. Vidler, M.C.S.P.
Vice-Chairman of Congress

Miss M. D. Verco (Australia)
Member of W.C.P.T. Executive Committee
Miss M. Spence (Canada)
Member of W.C.P.T. Executive Committee
Miss M. J. Neilson, Hon. Secretary
World Confederation for Physical Therapy
Miss M. Brown (New Zealand)
(representing Miss P. M. Andrews)
Mrs. F. Norbech (Norway)
Member of W.C.P.T. Executive Committee
Miss G. E. Bristow, M.C.S.P.
Vice-Chairman of Congress
Dr. P. Bauwens
Hon. Sec. International Federation of Physical Medicine

Professor J. Whillis, Chairman of the Council of the Chartered Society and Chairman of the Congress, first introduced the Minister of Health, the Rt. Hon. Iain N. MacLeod, who congratulated the Congress on its good beginning and expressed the hope that it would eventually have as large a representation as the World Health Organization. He referred to the fact that he had to break an appointment with a physical therapist that morning in order to open the Congress and went on to explain that if he were not attending this meeting, and if the physical therapist who was treating him were not also attending it, he would at that moment be receiving treatment for what the uncharitable might call an occupational disease of politicians—a stiff neck.

The Minister of Health Opens the Congress.

As Mr. MacLeod declared the Congress open, a switch was pressed which illuminated a large globe and caused it to revolve slowly. The globe, marked with the geographical distribution of the Congress membership, remained lighted and revolving throughout the meetings. The effectiveness of this ceremony was further enhanced by the sound of the lovely voice of an unseen person reading the following message written by Miss Griffin, a member of the Chartered Society:

> "Let the spirit of the Congress be a willingness to serve and a sense of just enjoyment, for happiness and health are next of kin, and, from true faith in a Creator comes willingness to help a neighbour, content of mind and peace to men."

Sir Harry Platt, President of the Chartered Society, and Miss W. N. McAllister, Delegate and First Vice President of the Confederation, then welcomed the group on behalf of the Chartered Society. Rt. Hon. Lord Webb-Johnson, Past President, Royal Society of Medicine, spoke on behalf of the medical profession in Great Britain. Rt. Hon. Lord Horder wished the Congress well for the International Federation of Physical Medicine and the British Association of Physical Medicine. Replies were made in the name of the visiting members of the World Confederation by Mrs. S. Coleridge of Sweden, Second Vice President of the World Confederation, and by Miss Mildred Elson, President. The theme of Miss Elson's remarks was the unseen guests at the Congress—the patients—because of whom its members had gathered to learn from and share with each other.

The members of our Association who were privileged to attend the Congress experienced then and many times throughout the week a feeling of pride and gratification in the dignity, graciousness, and simplicity with which our Executive Director discharged all her duties and responsibilities as President of this new international organization. It was a distinct tribute to her abilities and leadership that her repeated declinations to accept renomination as President were overruled and that she was to all intents and purposes "drafted" to succeed herself in this office.

The program of scientific events which followed this opening meeting has been published in the *Review*. Many of the scientific papers will be published in the *Journal of the Chartered Society of Physiotherapy*. The November issue of

Miss Elson and Mrs. Coleridge (Sweden) Greet a Norwegian Physical Therapist.

the *British Journal of Physical Medicine* contains, I believe, a report on the scientific papers and demonstrations. Reports of the complete proceedings now in the process of publication by the Chartered Society will eventually be available for sale in our National Office.

It is not possible, of course, to discuss these papers here but the excellent attendance at all the meetings and at the study visits to hospitals by the 1,750 registrants is witness to the interest and enthusiasm with which the program was received. I trust that my memory may serve me well enough to pass on to you some random impressions and observations which may fill in the gaps of printed programs and published papers.

An event not appearing on the program but which gratified and delighted all in attendance was the surprise visit on Tuesday morning of Dr. Howard Rusk and Mr. Eugene Taylor enflight to the United States from South Korea. The urgency of Dr. Rusk's message to the group on the great need for physical therapists in South Korea did, indeed, give pause to that audience and furnished food for thoughtful consideration by all.

Tuesday and Wednesday afternoons were devoted to study visits to twenty-six hospitals, rehabilitation centers, and factories. These were most interesting and afforded a welcome opportunity for observation of English methods and technics and an interchange of ideas.

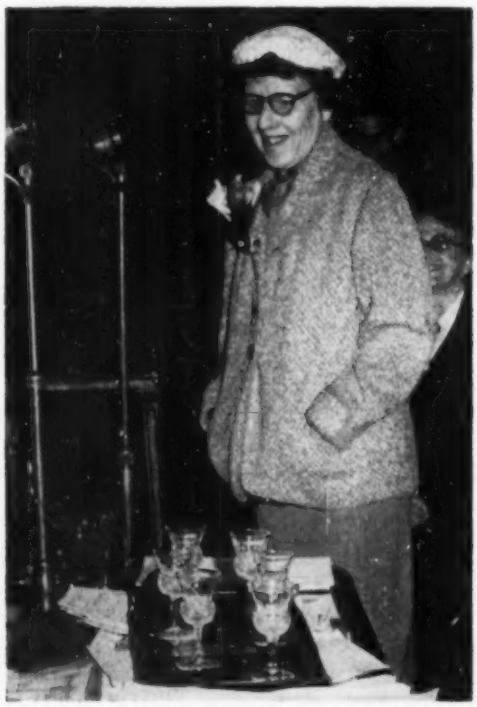
Thursday morning was devoted to papers by physical therapists from each member country. Catherine Worthingham, representing the United States, presented an outstanding paper on Trends in Education of the Physical Therapist which evoked much favorable comment. Miss Dyer, the delegate from South Africa, speaking on Physiotherapy in Relationship to the Treatment of Non-European Patients, fascinated her audience with most illuminating tales of her professional experiences in South Africa. In fact, commendation of the entire morning's program was heard on all sides from doctors and physical therapists alike.

Many sessions throughout the week were characterized by interesting practical demonstrations. A dramatic example was the demonstration of exercises for asthma with a class of children aged 4 to 6 years by Miss M. K. McDowell of Brompton Hospital. The lecture and demonstration by our own countrymen, Dr. Herman Kabat and Miss Margaret Knott, on Proprioceptive Facilitation Therapy for Paralysis elicited much interest and discussion.

Representatives from twenty-five countries, including delegates from the twelve member countries (Australia, Canada, Denmark, Finland, France, Great Britain, New Zealand, Norway, South Africa, Sweden, United States of America, and Western Germany) were present at the Second General Meeting of the World Confederation held on Thursday afternoon. The meeting unan-

Catherine Worthingham Speaks on Education.

imously confirmed the decision of the Executive Committee to admit to membership the Comité National des Masseurs-Kinesitherapeutes Francais. Reports of the President, the Secretary, and the Executive Committee were read reflecting the activities and accomplishments of this new organization for the past two years. Firm basic foundations of the organization have been laid; a good beginning has been made in the orientation of the twelve member countries to each others' standards and practices, aspirations and problems; contacts and working relationships with other international bodies are being initiated and consolidated. Informational material has been disseminated by the periodic issue of bulletins and the exchange of professional journals. World-wide circulation was given to the Congress programs and posters. The Ministry of Health of Great Britain issued invitations to fifty overseas governments to send official observers. These activities will be continued. Among the plans for the future is the publication of a leaflet for general circulation, explaining the uses of physical therapy and the circulation of information concerning standards of training and examination in member-countries of the World Confederation, bursaries and grants available for scholarships and study and employment opportunities.



A Lovely Gift Is Admired.

The results of the elections held that afternoon were as follows: Miss Mildred Elson (U.S.A.), President; Miss W. M. McAllister (Great Britain), First Vice President; Mrs. S. Coleridge (Sweden), Second Vice President; Mrs. R. Agersnap (Denmark), Third Vice President. Australia and France were elected to fill two vacancies on the Executive Committee. The new Executive Committee reappointed Miss M. J. Neilson, Chartered Society of Great Britain, as Honorable Secretary and Treasurer.

The invitation extended by the American Physical Therapy Association to hold the next Congress in New York in 1956 was accepted. It is again difficult to impart on paper the feeling this invitation seemed to engender. The expressions of enthusiasm were not untouched by wistfulness and I feel sure that right then and there many private, individual "ways and means" committees were appointed. To be hosts to a group to whom such an experience will mean so much will be a responsibility the successful discharge of which should bring untold mutual satisfaction. It should be mentioned at this point too that the United States delegation felt a distinct and, I think, quite justifiable sense of pride when the contribution of the American Physical Therapy Association to the Confederation ($1,050.00) was announced. It was very greatly appreciated by the entire World Confederation. In closing, on behalf of the Chartered Society of Physiotherapy and as a memento of the Congress, Miss W. M. McAllister presented a set of sherry glasses to the President, silver spoons to the members of the Executive Committee, and a fountain pen to the Honorable Secretary.

I have purposely left some mention of the social events of this brim-full week to the last of this report. They would seem a good note on which to conclude it if I could translate to you in some way the glamorous and delightful touch they added. I shall hope that the accompanying pictures may accomplish this.

On Monday evening a reception was given at Lancaster House by Her Majesty's Government in the United Kingdom of Great Britain and Northern Ireland. Lancaster House, the former home of the Duke and Duchess of Sutherland, is now used by the government for official entertaining. It is a beautiful place decorated in

The Lord Mayor of London and Dorothy Hewitt.

the period of Louis XIV, and it was an elegant party.

On Tuesday night some of the overseas visitors were the guests of the London Branch of the Chartered Society for a trip on the River Thames to the Tower of London to watch the Ceremony of the Keys and to see the Crown Jewels. Others attended a formal reception at the Great Hall of the British Medical Association House and both events were much enjoyed.

None of us will soon forget the pageantry of the reception Wednesday night at the historic Guildhall which the accompanying pictures will reflect far better than my words. The Guildhall, originally erected in the early fifteenth century, is the seat of municipal government for the City of London—the latter is an area of slightly more than one mile square and is the most ancient administrative unit in the mighty London of which it was the nucleus. The guests were received by the Lord Mayor of London and the Lady Mayoress. They, along with the other official dignitaries, the City Marshall, and Sheriffs were attired in robes of crimson and gold and were charming hosts.

The reception at Apothecaries Hall on Thursday was another pleasant occasion and unusual opportunity for overseas visitors. The week was climaxed by a beautifully arranged formal dinner and dance at the Park Lane Hotel attended by member guests. A toast was proposed to Her Majesty the Queen by Professor Whillis following which Dr. Jerome S. Peterson, Director, Division of Organization of Public Health Services of the World Health Organization, proposed the health of the World Confederation for Physical Therapy. Miss Mildred Elson replied on behalf of the World Confederation. Following this was a display of Scottish dancing by members of the Royal Scottish Country Dance Society a treat for all. The evening was concluded by ballroom dancing for all those who had any remaining shreds of strength after this strenuous and exciting week and it was surprising how many did!

I only wish that I could express to you how much we all felt was gained in mutual understanding, in the furthering of knowledge, both professional and general, and in pure personal enjoyment and pleasure by attendance at this Congress.

Since 1956 is not as far off as it sounds I most enthusiastically recommend that you plan now to be part of the Second Congress of the World Confederation for Physical Therapy done American style!

HARRIET S. LEE, *President*
American Physical Therapy Association

Marriages

Elizabeth Ann Houseman of Medina, Ohio, to William Anderson, Medina, Ohio

Hilda Holtebeck of Bismarck, North Dakota, now Mrs. Hilda Hays, Bismarck, North Dakota

Victoria Greenberg of Sewickley, Pa., now Mrs. Victoria Green, Sewickley, Pa.

Dorothy Kochersperger of Belmont, Mass., now Mrs. Dorothy K. Morse, Lynn, Mass.

Margaret Arey of Boston, Mass., now Mrs. Margaret A. Sandin, Boston, Mass.

Major Elsie Kuraner of Ft. Devens, Mass., now Major Elsie K. Roskosky, Ft. Devens, Mass.

Any Questions?

Question —

Please explain the enrollment deadline for the group insurance policy?

— A MEMBER

Answer —

The insurance company in consultation with the National Office decided that members would have an opportunity to enroll by mail until December 10, 1953. After that time members will be given an additional period to enroll through local agents of the company. This will probably extend through February. After that time no one may enroll except as an annual enrollment period may be declared and 51% enrollment of membership be achieved so that anyone may secure a policy regardless of risk.

School Section

A new year, and a new section in your *Review*. We hope you are as happy to have us as we are to be here. For those of you who haven't watched us grow, let me tell you something of our birth and development.

In the spring of 1953, a group of students at one of our physical therapy schools got together and decided that they would like to know some of the other "physical therapists of America." A letter was sent to all the various schools, outlining a suggested plan for inter-school communication. The replies were favorable; so the idea was presented and approved at the American Physical Therapy Association Convention in June. A temporary committee was then appointed to work out plans for the first few issues and to appoint an editorial board for 1954. This board will be elected yearly and will consist of Junior and Senior students of physical therapy.

Through the Student Section, we hope to let other students (and grads) know what is going on in our schools across the nation. We also are willing and anxious to discuss any problems which may arise in an attempt to further our profession. Remember, our profession grows through the students of today who are the therapists of tomorrow.

As a parting thought, may we suggest that the week of January 24th be proclaimed "Student Recruitment Week," and as you do your bit for the March of Dimes, perhaps you can encourage others to do their bit — as physical therapists!

ON PARADE

Ann Morton Nourse

At this time, when the national organization of our profession is expanding its program on recruitment, one means the Division of Physical Therapy at the University of Pennsylvania has found successful in introducing young students to physical therapy as a career is the "Open House." This program, which undoubtedly is employed by other schools, has been used several times at Penn with increasing satisfaction. For those schools which have already established Open House programs, this article will offer a basis for comparison; for those which have not, it may give helpful suggestions.

The Division of Physical Therapy at Penn participates in an Open House once a year for all persons interested in physical therapy, as well as two "High School Days," provided for in the general university program. During this time, groups of high school students interested in a career in one of the auxiliary medical services are invited to the School of Auxiliary Medical Services where, after hearing a brief talk by the Dean concerning the school in general, the students come to our classrooms. Here, as they get settled, they fill out slips of information and receive a catalog of the school.

First they are welcomed by a student or faculty member and introduced to the field of physical therapy. Then the major part of the program begins, as student "physical therapists" employing various physical therapy procedures to student "patients"; each of these demonstrations is accompanied by a brief explanation from the "therapist," and questions are welcomed. Finally, having seen such examples as electrotherapy, hydrotherapy, rehabilitation and others in practice, as well as hearing about our academic classes, the prospective students meet again in a group, where the school director is present to answer questions, academic or technical, and to tie the knot on our packaged program of about forty minutes.

That is the way it has worked, with variations, at Pennsylvania, but there are generalizations applicable to an Open House at any school. As with every successful production, there are certain rules to be followed, which might be called the four P's; planning, practice, personality, and program. The most important is *planning*, for there must be a schedule of "who is to do what when." Not only should you avoid Susie Jones' discovery at the last moment that she should be

Student Division of Physical Therapy, School of Auxiliary Medical Services, University of Pennsylvania. Aided by a scholarship from the National Foundation for Infantile Paralysis.

demonstrating an infra-red lamp when she has not yet had a course in electrotherapy, but also Ben Anderson should not be dragged from his once-a-week job at the post office if another student can substitute for him.

Next comes *practice*, and, if possible, a dress rehearsal. Those students participating in certain demonstrations should know the exact setup for their equipment and arrive in time on the day of the program to make sure it is all right. The "lecturers" should have rehearsed their speeches, as well as having planned them in advance.

Although *personality* is a rather touchy quality to describe, it is important to consider in putting across a program. Enthusiastic and interesting delivery is essential. The students who take part in the demonstrations should inject a little pep into their talks and should know what they are talking about, for it may be the president of the state organization or one of last year's graduates trying to trip them up.

Last, but definitely not least, is the *program*, which should be interesting and informative, varied with discussion and demonstrations, and not so long that it bores the listener.

No matter how careful you may be in planning the program, there are certain pitfalls you cannot avoid. One which is out of your hands entirely is the weather; ducks like to be out when it pours, but very few human beings do. However, you can avoid picking a date which will coincide with the enticements of other activities, such as a demonstration of another school in town, or the big homecoming football game. Another point to watch is the all-important neat appearance of the students, equipment, and treatment rooms. Nothing frightens away mothers of prospective students-to-be more than dust mice in the corners and nothing looks sloppier than spilled oil, messy draping of patients, and ill-groomed "therapists." Finally, do not succumb to the pitfall of length. Try to arrange that the program in its entirety will take only thirty to forty-five minutes, with a little time at the end for questions; remember, the visitors may have had other school programs to appear interested in that morning.

From our school program and from other critics come these general suggestions to add to the success of your program. In choosing a time for your Open House, it is often wiser to give several short demonstrations throughout the year than one long program which exhausts the participants for the succeeding twelve months. On the list of invitations you should be sure to include cards for the local high school guidance departments and the vocational officers of nearby colleges. While you are at it, it would be nice to ask parents of the present students (you would be surprised how many of them have not the vaguest idea in the world what their own Jimmy is doing) and the faculty of the hospital or medical school from whom you receive academic instruction. If the school has close ties with the occupational therapy school, it is a nice gesture to ask them to go in with you in preparing the program, and, more important, gives the prospective student an idea of the broad facilities of a rehabilitation program.

Now for the program itself; how do you go about staging an Open House? Let us assume that invitations have been issued and thorough preparation has been made, so that the first guest is about to walk in the door. He should be made to feel welcome, but try to avoid the milling of people around the door, eager to welcome him with overbright smiles and stares. Our most successful program consisted of an introductory talk, demonstrations of an academic and technical nature, and a brief resumé at the end in which all sorts of questions could be answered.

The introductory talk can be easily handled by one of the students himself, which adds to the informal atmosphere. This talk should cover just what physical therapy is and what the therapist does. There should be mention of the personalities and interests of people who are in the field, the academic requirements and the personal characteristics most suitable to the therapist. Naturally the prospective student is interested in knowing more details about the training he will have in the classroom, laboratory, and clinical practice, and is concerned with the cost of this training. A glimpse of the type of work open to him after graduation—the places, the salaries, and the wide field of opportunity—is very important. Above all, be brief and to the point; try not to be too technical, for long words to the uninitiated sound inconsiderate rather than intelligent.

As much time and space as possible should be devoted to demonstrations of classroom work: drag out the skeleton from your closet, and talk about anatomy and physiology; use any physical modalities and treatments that you have available. Of course, students act as both "patients" and "physical therapists"; we have the freshmen and sophomores in the degree course act as guinea pigs, while the older members of the school are the "therapists." An obvious indication of success is when a distraught viewer queries, "Is that patient really going to be paralysed for life?"—pointing to your fellow stu-

dent lying quietly in bed. About two minutes at each "exhibit" is usually sufficient to give the group a chance to see the work and to hear a brief explanation by the "therapist."

One final check list of items for your Open House: Make sure that there are ushers to direct the groups or persons; they avoid bottlenecks and add a personal touch, and if the program is at a place not easily reached, ushers at the front door can indicate the way. There should be a table near the entrance or exit with sufficient pamphlets provided by the school as well as the National Office of the American Physical Therapy Association, and blanks to be filled out with such pertinent information as the name and address of each prospective student; school or college attended; and whether he would like further information or an interview. However, remember that the reading material is fine when they get home, but prospective students should *see* enough to remember physical therapy above all other careers to which they have been introduced. Be sure that the director and heads of various courses are available for any questions which may arise.

In order to prepare for emergencies, some of the students you choose for ushers should be able to act as substitutes in case of the absence of a scheduled demonstrator, or to substitute during lunch hour if the Open House goes through the day. Last, and unpleasant as the thought may be, certain people should be designated as the "clean-up committee." There should not be so many that they get in each others way trying to make themselves useful, but a sufficient number so that a couple of helpful ones are not left till the next dawn straightening chairs. Of course, each demonstrator should be responsible not only for getting out his equipment, but also for returning it to its proper resting place.

Why all this work? We have found the Open House to be rewarding to the students participating, to the school putting on the demonstration, and to the profession of physical therapy. To the student it gives the opportunity to get clinical practice in front of a watchful group and to become more at ease in speaking to interested persons; this is invaluable when he later graduates and must be a teacher as well as a clinical physical therapist. The school benefits by the recruitment of students and has a chance to show others in the hospital or college the results of its work. And the profession is afforded another method of presenting itself to the public and of offering its members an opportunity to put themselves on parade.

New Student Members

University of California

Joanne Baldwin
Beverly Chan
Marion J. Engel
Joseph E. Harvey
Kuniko Hashimoto
Joyce Ishizaka
Lela Grunetta Langford
George C. Louis
Evelyn Frances Morrison
Nancy Swinney
Joy Wade
Mrs. Anette Hansen Warden
Frank Yakushi Jr.

Charity Hospital

Kenneth A. Barrilleaux
Janie Graham
Dean Harrell
Raymond Hayes
Myron W. Lockey
Howard Sadowsky
Murrah A. Sanders
James E. Simon
Sister M. Camillus Bayer

Cleveland Clinic

Miriam Boystel
Gertrude Brandstadt
Dorothea Cepik
Joan Donnelly
Sally F. Fowler
Jean Gillet
Jean Hoyer
Gladys Jones
Kathryn Kaiser
Herman Menapace
Helene Miller
Mary Patterson
Violet Jean Schneider
Orvetta Searfoss
Maria Julie Snel
Dorothy Stone
William F. Wilde
Leisa Zink

Medical College of Virginia

Joseph B. Ahlschier
Joan Beckwith
Joan Bennett
Bruce T. Bobb
Peggy Campbell
Harold Loren Cook, Jr.
Barbara Cossoy
Russell Cromwell
Heartha Cullins
John Cusson
Frances Ward Davis
Betty Lou Driver
Barbara Earley
George Rucker Ellington
Paul F. Fleer
Loring Franklin
Jean Gregory
Edwin Harper
Charles Hartman
James W. Hunter, Jr.
Barbara Jackson
Gwendolyn Jennings
Marion Judge
Betty Kennedy
Toula Latto
Barbara Little
Lenore Lonker
Ernest Mayes
Ruth McDonald
Roy Mosman
William Earl Murray, Jr.
Joyce Noble
Doris Parrish
Celia Popiolek
Pershing Thomas Pressley
Frank Presty
Dominic Shell
Jessica Tignor
Margaret Biruta Vildzius
Genevieve Welch
Sibyl Jeannette White
Joseph Zajac

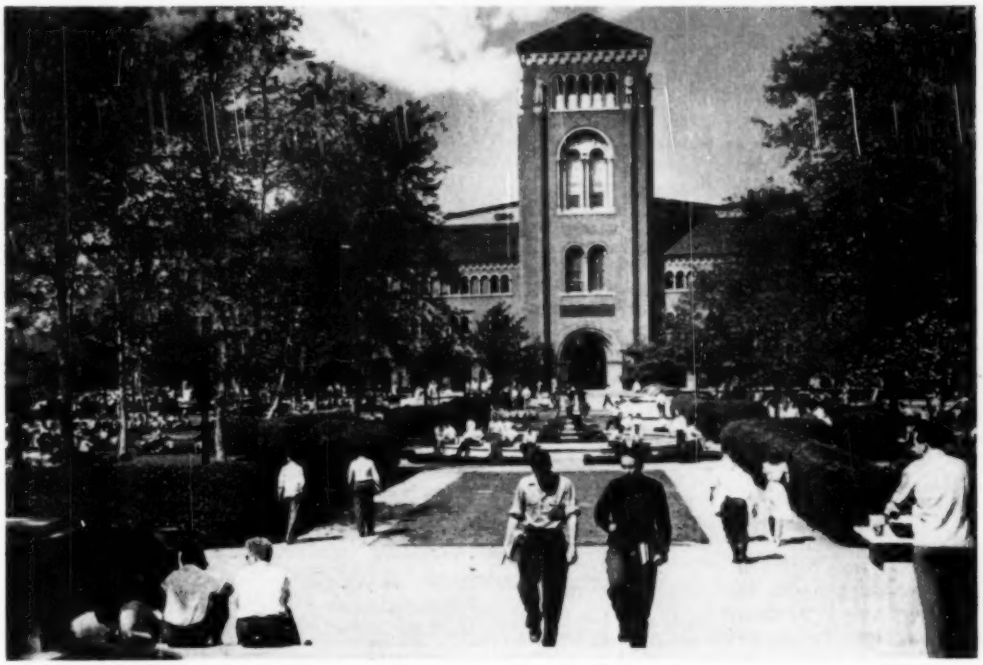
University of Colorado

Nancy Barrett
Dana L. Blakkolb
Charles F. Branch, Jr.
Mildred Coles
David Crosson
Joyce E. Davis
Gretchen Gasser
Grace Eliassen
Charles B. Hackney
John Nitz
Dolores Robinson

University of Kansas

Harry R. Dinnel, Jr.
Marilynn House
Irene Kuchan
Marian Louise Miller
Carolyn Lee Neff
Anne Renfrew Ross
John Robinson Shull
Louise Steuber

(Continued on page 42)



The University of Southern California

In 1945 under the auspices of Dr. Rufus B. von KleinSmid, President of the University (now Chancellor), and Dr. Alfred S. Raubenheimer, Dean of the Letters Arts and Sciences College (now Educational Vice-President), and at the instigation of Miss Margaret S. Rood, Head of the Occupational Therapy Department, the Department of Physical Therapy was established in the College of Letters, Arts, and Sciences, Division of Health, Physical Education and Therapy. Dr. Wayne McFarland was appointed Medical Director and Miss Charlotte W. Anderson was appointed Chairman of the Department. Close affiliation with Orthopedic Hospital and Los Angeles County General Hospital made hospital clinical material and teaching available. At the appointment of Dr. Ora L. Huddleston to the staff of the Medical School he became the Medical Director of the Department. In 1948 Dr. Charles Le Roy Lowman was appointed Medical Director and is currently serving in that capacity.

The Department has continued to develop under President Fred D. Fagg, Jr., and Dr. Tracy Strevey, Dean of the College of Letters, Arts and Sciences. A four year program leading to a bachelor of science degree and a certificate in physical therapy; a certificate program for college graduates having certain prerequisites; and a curriculum leading to a master's degree are now available. Arrangements with the Occupational Therapy Department make it possible for selected students to obtain a bachelor of science degree and certificates in both occupational and physical therapy. Fellowships can be arranged for graduate students wishing to go into the teaching field.

Augmentation of preclinical practice has developed with the establishment of the Student Health Service on the campus. Clinical training facilities in 14 hospitals and clinics give the students experience in general adult and general children's work as well as such specialties as cerebral palsy, neuro-psychiatry and treatment of the poliomyelitis respiratory patient.

With the increase in facilities available to the Department has come a corresponding increase not only in the number of students but also in the number of staff members which now includes Mrs. Roxie Morris, the Assistant Chairman of the Department, Miss Dorothy Graves, Miss

Lillian Chabala, and Miss Mary Bennett, seven part-time lecturers, and one teaching fellow. The enthusiasm of Dr. Charles L. Lowman, Miss Susan Roen, Dr. Elizabeth Austin and Dr. John Walters is a well known asset. It has been the objective of the staff to provide an integrated curriculum with theoretical material followed immediately by practical application in an effort to develop a "thinking therapist" who considers the patient an individual with individual problems requiring careful planning by all concerned.

Graduates of the Department are scattered all over the United States and from Honolulu to Greece. Our Trojan Therapists sing:

"If you want to be a real good P.T.
Come Southern California Way,
Enroll at U.S.C.—Then probably
You will never want to go away.
You can practice kines. in the sunny peace,
On the beach by the balmy sea,
And you can study Gray in a practical way,
Underneath a shady orange tree.

Chorus

What fine cadavers they always have here
To help study anatomy,
And there's no snoozin while reading Krusen,
It's like a thrilling mystery.
So get on your way and don't delay,
Avoid the rush and you will be
Another famous name up in the hall of fame,
With the others from U.S.C."

(To "Polly Wally Doodle" melody)

New Student Members

(Continued from page 40)

University of Minnesota

John D. Allison
William R. Bird
Michele Flanagan
Elizabeth Habedank
Jess Hetherington
Donna Johanson
Sachiko Kaneko
Jean Mandery
Marian Velleu
Norman Wegner

Northwestern University

Constance Jean Bergstrom
Virginia Congreve
Dorothy Culhane
Ellen Jane Findley
Nellie Ann Gardy
Louis Selma Goldberg
Mrs. Hazel W. Gray
Mrs. Ruth Hill
Mary Catherine Jones
Erminia Juliano
Patricia Krueger
Marilyn J. Lord
Joan Mazurek
Sally Miller
Peggy Moore
Mrs. Rosa W. Morgan
Barbara Peterson
Joan Rauschert
Florence Smith
Martha Staley
Frieda Starcevich
Dorothy E. Webster
Joyce Weiser
Mrs. Susan S. Weltman

University of Southern California

Elizabeth Caron
Jack W. Cheever
Robert J. Fleming
William Patrick Fortune
Edwin F. Grabast
Gwendolyn Jennings
Elta Nadine Kern
Bernard Kliska
Esther M. Lyon
Harris Matsushige
Katherine Elaine McDaniel
Richard McMinn
Neil H. Meyers
William Ernest Peaker
Patricia Carolyn Powers
William Reece, Jr.
Gertrude Snowdon
Christie James Xanthkis

MEET OUR NEW CONTRIBUTORS

(Continued from page 13)

Reconstruction Home, West Haverstraw, New York. She is a member of the American Physical Therapy Association.

Major Agnes P. Snyder, WMSC, Chief Physical Therapist, Physical Therapy Clinic, Walter Reed Army Hospital, Washington, D. C., holds an A.B. degree from Marshall College, Huntington, West Virginia, and an M.S. degree from the Medical College of Virginia at Richmond.

Major Snyder completed requirements for a physical therapy certificate at Walter Reed Army Hospital in 1933 and has served as physical therapist with the U. S. Army from that time to the present. She has just completed an assignment as Physical Therapy Director, Physical Course, Medical Field Service School, Fort Sam Houston, Texas.

Eugene J. Taylor, Assistant Professor of Clinical Physical Medicine and Rehabilitation, New York University College of Medicine, holds a B.S. degree in education from Kansas State Teachers College and a master's degree in speech from the State University of Iowa.

He has written and edited a number of books on rehabilitation; the most recent, "Living with a Disability," with Dr. Howard Rusk as co-author, was reviewed in the December issue of the Physical Therapy Review.

Mr. Taylor is Consultant in Rehabilitation, the National Society for Crippled Children and Adults; Consultant, Health Resources Advisory Committee, Office of Defense Mobilization; Consultant, Office of Vocational Rehabilitation; and has been Consultant in Public Relations for the American Physical Therapy Association since 1949.

R. Lorraine Willer, Physical Therapist, Dallas Medical and Surgical Clinic, is a graduate of Grand Rapids Junior College and Michigan State College, where she received her B.S. degree. She enrolled in the Army Physical Therapy Courses and was awarded a certificate at O'Reilly General Hospital in 1944.

Miss Willer served as physical therapist in Army hospitals and later at the Veterans Administration Hospital, Hines, Illinois. She is a member of the American Physical Therapy Association.

Schools of Physical Therapy

APPROVED BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS
OF THE AMERICAN MEDICAL ASSOCIATION

Graduates of these schools are eligible for membership in the American Physical Therapy Association.

California

School of Physical Therapy
Childrens Hospital Society
4614 Sunset Blvd., Los Angeles 27
(Univ. of California, Los Angeles)

School of Physical Therapy
College of Medical Evangelists
White Memorial Hospital
Boyle & Michigan Aves.
Los Angeles 33

Department of Physical Therapy
University of Southern California
University Park
Los Angeles 7

Curriculum in Physical Therapy
School of Medicine
University of California
3rd & Parnassus
San Francisco 22

Division of Physical Therapy
Stanford University
Stanford

Colorado

School of Physical Therapy
Department of Medicine
University of Colorado
4200 East Ninth Ave.
Denver 7

Connecticut

School of Physical Therapy
University of Connecticut
Box U 101
Storrs

Illinois

School of Physical Therapy
The Medical School, Northwestern University
303 East Chicago Ave.
Chicago 11

Iowa

†Department of Physical Therapy
State University of Iowa
University Hospitals
Iowa City

Kansas

School of Physical Therapy
University of Kansas — Medical Center
Kansas City 3

Louisiana

†Charity Hospital School of Physical Therapy
1532 Tulane Ave.
New Orleans

Massachusetts

*Course in Physical Therapy
Bouve-Boston School
Medford 55
(Tufts College, Medford)

*Program in Physical Therapy
Simmons College
Children's Medical Center
300 Longwood Ave.
Boston 15

Department of Physical Therapy
Boston University
Sargent College
6 Everett St.
Cambridge 38

Michigan

Curriculum in Physical Therapy
Dept. of Physical Medicine & Rehabilitation
University Hospital
University of Michigan
1313 East Ann St.
Ann Arbor

Minnesota

Course in Physical Medicine
The Medical School
University of Minnesota
Minneapolis 14

†School of Physical Therapy
Mayo Clinic
Rochester

Missouri

Department of Physical Therapy
Division of Auxiliary Medical Services
School of Medicine
Washington University
Barnes Hospital
600 S. Kingshighway
St. Louis 10

Division of Health & Hospital Services
St. Louis University School of Nursing
1402 South Grand Blvd.
St. Louis 4

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* Only women accepted.
† Only certificate awarded.

New York

Physical Therapy School
Albany Hospital
New Scotland Ave.
Albany 1
(Russell Sage College, Troy)

Program in Physical Therapy
University of Buffalo
2183 Main St.
Buffalo 14

Division of Physical Therapy
College of Physicians & Surgeons
Columbia University
630 W. 168th St.
New York 32

Curriculum in Physical Therapy
School of Education
New York University
Washington Square
New York 3

North Carolina

Division of Physical Therapy
School of Medicine
Duke University
Durham

Ohio

School of Physical Therapy
The Frank E. Bunts Educational Institute
Euclid & East 93rd St.
Cleveland 6
(Cleveland Clinic)

Pennsylvania

†The D. T. Watson School of Physiatrics
Leetsdale

Division of Physical Therapy
School of Auxiliary Medical Services
University of Pennsylvania
1818 Lombard St.
Philadelphia 46

Texas

†Grady Vaughn School of Physical Therapy
Baylor University Hospital
Dallas 1

†School of Physical Therapy
Hermann Hospital
Houston 5

School of Physical Therapy
The University of Texas — Medical Branch
Galveston

Virginia

Physical Therapy School
Baruch Center of Phys. Med. & Rehabilitation
Medical College of Virginia
Richmond 19
(Richmond Professional Institute)

Wisconsin

Section in Physical Medicine
Medical School
University of Wisconsin
Madison

U. S. Army Medical Service

†* Physical Therapy Course

Medical Field Service School
Brooke Army Medical Center
Fort Sam Houston, Texas and
Brooke, Letterman, and Walter
Reed Army Hospitals

Write to: The Surgeon General
Department of the Army
Washington 25, D. C.
Attention: Personnel Division

* Only women accepted.
† Only certificate awarded.

Please direct all inquiries regarding tuition, entrance requirements and other specific information to the school and *not* to the American Physical Therapy Association.

Medical Field Service School

Col. Emma E. Vogel, WMSC (Ret.), organizer of the Army Medical Service's Physical Therapy Branch and the first chief of the Women's Medical Specialist Corps, addressed physical therapy students at the Medical Field Service School, Brooke Army Medical Center in October. She spoke on the "History of Physical Therapists in the Army."

Miss Dorothy Hewitt, educational consultant of the American Physical Therapy Association, visited the Medical Field Service School and Brooke Army Hospital October 9 to 13.

Committee on Nominations

Corinne Way, Chief Physical Therapist at the U. S. Public Health Service Hospital in San Francisco, was appointed by the Executive Committee in November to fill the unexpired term of Maxine Schuldt who resigned.

The Committee held a two-day meeting in Chicago in mid-December to select the slate of candidates for the 1954 election of officers.

General News

Polio Vaccine Study

A nationwide study to determine the effectiveness of a polio vaccine in preventing paralytic polio will get underway in one or more southern states during the week of February 8, 1954, according to Mr. Basil O'Connor, President of the National Foundation for Infantile Paralysis. Prior to this date, Dr. Jonas E. Salk, Research Professor of Bacteriology at the University of Pittsburgh — the research grantee of the National Foundation, who developed the vaccine — will have resumed his immunization studies in Allegheny County, Pennsylvania, with vaccination of 5,000 to 10,000 additional children.

In a gradually expanding program, more than two hundred counties throughout the United States will be involved before the mass vaccination project ends by June 1, 1954. During that period, 500,000 to 1,000,000 school children of the second grade will have taken part in one of the largest studies of its kind ever undertaken. Participation will be on a voluntary basis with the consent of the child's parents or legal guardians. Final results of the evaluation study are not expected until some time in 1955.

In announcing the vaccine study, Mr. O'Connor emphasized that the uniqueness of the project was not merely its size. "For the past sixteen years," he said, "millions of Americans have actively supported scientists in the laboratory helping them create this new potential weapon against polio. And now they will continue that cooperation and help prove whether we have really reached our goal — the conquest of polio."

The vaccine evaluation project will be under the over-all supervision of Dr. Hart E. Van Riper, medical director of the National Foundation. Actively cooperating in the study are medical and scientific societies, state and county public health officers, and school authorities. The Association of State and Territorial Health Officers has appointed a committee consisting of Dr. R. H. Hutcheson (Tennessee), Dr. John D. Porterfield (Ohio), and Dr. Herman E. Hilleboe (New York), to advise with the National Foundation in planning the project.

Fact Sheet on Vaccine Validity Study

Purpose of the Study

To determine the effectiveness of a trial polio vaccine in protecting children against paralytic polio.

Vaccine to be Used

The vaccine to be studied is the one recently developed by a research grantee of the National Foundation — Dr. Jonas E. Salk, Research Professor of Bacteriology at the University of Pittsburgh.

Nature of the Study

The vaccine will be given to second grade school children during the non-epidemic period before June 1, 1954. Thereafter its protective effects will be evaluated by comparing the incidence of subsequent paralytic disease in that group with such incidence in the first and third grade school children.

When

The vaccinations will start during the week of February 8, 1954.

Duration

The vaccinations must be completed by June 1, 1954, to precede the season of high polio incidence.

Where

The study will get underway in one or more counties in the South. In a gradually expanding program, more than 200 counties throughout the United States will be involved. It is expected that as many as 25 counties may be under tests simultaneously.

Selection of Counties

To insure a valid basis for a significant study, counties are being selected whose previous records indicate:

1. High polio incidence for past five years.
2. High epidemic rate in past five years during June through September.
3. High attack rate in specific age group.

4. Adequate health and education facilities.
5. Socio-economic factors, geographic location, etc., to provide a significant cross-section study.

Number of Children

It is expected that from 500,000 to 1,000,000 children will receive the vaccine. A minimum of 500,000 is required to provide a statistically valid answer. Up to a million may be involved, depending on amount of vaccine available.

Who Will be Vaccinated

Children in the second grade of school will be vaccinated. The age of the child will not be the deciding factor. Children of this school grade are usually between 6½ to 8 years of age.

Dose of Vaccine

Three injections of vaccine will be given. Each dose is 1 c.c. The first two doses will be given at one-week intervals, the third dose four weeks later. The third dose is the "booster." All injections will be in the arm.

Type of Control

The basic controls will be the children in the first and third school grades. These will not be injected. The incidence of subsequent paralytic polio in those grades will be compared with such incidence in the vaccinated grades. Other controls will be siblings of the vaccinated children, and children in second grades who do not receive the vaccine.

Results of Study

The results will not be known until some time in 1955.

Preparation of Vaccine

The vaccine is composed of killed virus of all three types which have been grown in test-tube cultures of monkey kidney tissues. The virus has been killed by exposure to formalin and is prepared in a watery solution (aqueous types).

Vaccine Production

The vaccine used in the study will come from several sources with the bulk of it to be produced by a pharmaceutical manufacturer. Dr. Salk also is growing the virus and producing the vaccine. As the study progresses, the vaccine may be produced by a number of pharmaceutical houses. All vaccine, however, will be produced according to Dr. Salk's formula.

Safety Tests

Before being administered to children, the vaccine will have to pass three independent series of safety tests. The tests will be performed by the commercial manufacturer, by Dr. Salk, and by the Biological Standards Division of the National Institutes of Health — the branch of the U. S. Public Health Service which licenses and controls the manufacture of all biological preparations.

Who Will Conduct the Trials

The vaccine validity study will be a project of the National Foundation for Infantile Paralysis. In each county, the local health officer will be in charge. Local physicians will adminster the injections.

Cooperating Agencies

The study is being conducted with the close cooperation of state and county public health officers, various medical societies, and school authorities. The Association of State and Territorial Health Officers has appointed a committee consisting of Dr. R. H. Hutcheson (Tennessee), Dr. John D. Porterfield (Ohio) and Dr. Herman E. Hilleboe (New York) to advise with the National Foundation in planning the vaccine study.

Volunteers

Volunteers from the National Foundation's 3,100 chapters, covering every county in the United States, will help in organizing and manning the study in local areas; civic and community groups will also participate in the project.

Cost of Study

The cost of the project is estimated to be $7,500,000.

Abstracts

Clinical Problems in Neuromuscular Physiology

D. Denny-Brown, AM. J. MED., XV: 368-388, September 1953.

Diseases primarily affecting the contractility of muscles such as muscular dystrophy or the more destructive types of myositis do so in virtue of the loss of myofibrils in the muscle fiber. There is loss of contractility without change in excitability. Besides loss of muscle bulk and power of contraction the altered physiology is revealed only by diminishing size of motor unit potentials in the electromyogram and loss of individual muscle fibers in biopsy section. Degeneration of myofibrils as a result of trauma is the most certain method of demonstration of the primary fault.

The excitability of muscles is affected chiefly by large changes in body electrolytes, particularly in ionized potassium and sodium as in periodic paralysis, hyperkaliemia and Addison's disease. A fall in available intracellular potassium, a rise of extracellular potassium or a fall in extracellular sodium appear to be the significant factors. Block of the end-plate mechanism of the neuromuscular junction by myasthenia gravis indicates the presence of some curare-like substance produced by the arrival of nerve impulses at the end-plate. The phenomenon of myotonia indicates the opposite effect of some by-product of muscular excitation in stimulating local contractions in muscle fibers.

The effect of diseases of peripheral nerves is to damage the node of Ranvier of the myelin sheath, setting up an abnormal permeability in that situation which blocks the saltatory conduction characteristic of myelinated nerve. Lesser degree of disturbance results in repetitive transformations of single nerve impulses as they pass the point of damage, and the production of spontaneous repetitive discharges owing to loss of power of accommodation. This indicates that polarization is not at fault, but that it is maintained with difficulty in the presence of electrical and chemical changes that would not otherwise be adequate to set up an impulse. The form of such abnormal repetitive nerve impulses differs according to whether the foci are in the proximal, intermediate or distal parts of the nerve trunk. These differences determine the clinical features of such disorders as muscle cramps, tetany, nerve root fasciculation and myokymia. Coarse twitching and facial spasm arises from breakdown in the electrical insulation of nerve fibers in association with loss of accommodation, from similar disturbances of the node of Ranvier in proximal nerve trunks and roots. The variety of circumstances under which such foci can arise is discussed. Associated muscular hypertrophy is considered to be physiologic. More exact measurement of the excitability of nerve, end-organ and muscle fiber in the intact human, with better methods of assessment of the ionic polarization of excitable membranes, are necessary for better understanding of a variety of common disorders of muscle and nerve.

Fracture of the Carpal Navicular (Scaphoid) Bone, An End-Result Study in Military Personnel

Joseph S. Barr, William A. Elliston, Henry Musnick, Thomas L. Delorme, Joseph Hanelin, and Arthur A. Thibodeau, J. BONE & JOINT SURG., 35:609-625, July 1953.

As the result of an end-result study of forty-four veterans who had fractures of the carpal navicular, recognized while in Military Service during World War II, the following conclusions seemed warranted. If healing by primary union occurs, there is minimal residual disability which does not interfere with the performance of duty.

About 50 per cent of the ununited fractures were surveyed from the Service for wrist symptoms. If non-union is established before induction, this injury should be disqualifying for full-duty status.

The incidence of non-union in Military Service was 22 per cent. The factors tending to produce non-union appeared to be insufficiently prolonged immobilization and delay in instituting treatment. Immobilization must be maintained until there is union as shown by x ray. This may require more than eight weeks, even in acute fractures promptly diagnosed and treated.

The treatment of non-union in this series was unsatisfactory. Of the fourteen men with non-union, nine were treated conservatively without improvement; five were operated upon, union and a satisfactory result being obtained in two.

Persistent non-union results in partial absorption, displacement and fragmentation of the fragments, cyst formation in the navicular, and degenerative arthritic changes. Functional impairment was present in every case, but earning power was impaired in only 42 per cent of the cases.

A psychiatric study of these patients revealed the personalities to be heterogeneous with no particular trait outstanding. In only six instances were there clearly discernible psychological factors related to the fracture or the veteran's adjustment following the fracture.

The work capacity of these injured wrists, as determined by a specially designed recording ergograph, in cases with primary union showed little or no impairment. Only one of the 14 wrists with non-union showed a normal work capacity. The ergographic tracing in the uncooperative patient was characteristic and proved to be an aid in detecting lack of cooperation.

Cerebral Circulation and Metabolism in Multiple Sclerosis

P. Scheenberg, L. Blackburn, S. Kaim, and C. Stebger, ARCH. NEUROL. & PSYCHIAT., 70:2, August 1953.

Twenty subjects with confirmed diagnoses of multiple sclerosis were subjected to cerebral blood flow and metabolism tests by the nitrous oxide technic. The subjects were in various stages of exacerbation and remission of the disease. Electroencephalogram recordings and the Rorschach ink blot tests were performed on 12 of the patients.

While it is recognized that the methods of measuring cerebral blood flow are relatively crude, there was no indication of any alterations in the cerebral vessels or cerebral metabolism during an exacerbation. EEG's were normal in all patients with exacerbation of the disease. The author feels that these studies cast doubt upon the hypothesis of vascular spasm or thrombosis as a mechanism responsible for the pathologic lesions of multiple sclerosis.

Cerebral oxygen and glucose consumption are normal in patients

with multiple sclerosis. Several explanations put forth for this include: (1) More frequent distribution of cerebral lesions occurs in the brain stem which contributes relatively little to the total measurable metabolism of the brain. (2) The lesions mainly involve the myelin sheaths with relative sparing of tissues of high metabolism. (3) Alterations of tissue metabolism in multiple sclerosis may be more discrete involving lactate and pyruvate metabolism or even changes in cellular enzymatic processes.

The Rorschach test seemed to be much more sensitive in detecting the presence and extent of organic brain damage than the EEG or nitrous oxide tests.

Alterations of the Lumbar Curve Related to Posture and Seating

J. Jay Keegan, J. BONE & JOINT SURG., 35:589-603, July 1953.

This article presents an analysis of the subject of seating in relation to back symptoms. This work is based on a careful clinical study of over 3,000 persons with low-back complaints, 1,504 of whom have been operated upon for herniation of a lower lumbar intervertebral disc, as well as on a special study of the alteration of the lumbar curve in various sitting and standing positions.

The most common cause of low-back pain related to seating is posterior protrusion or extrusion of lower lumbar intervertebral discs.

The normal curve of the lumbar spine in adult man is determined by maintenance of the trunk-thigh and the knee angles at approximately 135 degrees.

Alteration of this normal lumbar curve, either an increase in standing erect or a decrease in sitting or stooping, is caused largely by the limited length and consequent pull of the trunk-thigh muscles of the opposite side.

The most important postural factor in the causation of low-back pain in sitting is decrease of the trunk-thigh angle and consequent flattening of the lumbar curve.

The next most important cause of low-back pain in sitting is lack of primary back support over the vulnerable lower lumbar intervertebral discs.

Added factors of comfort in seating are the shortness of the seat, a rounded narrow front border, an open space beneath for better positioning of the legs, and permissive change of position in the seat.

The design of all seats, regardless of model or size, should be based on this knowledge.

Management of the Convulsive Disorders

John B. Pfeiffer, G. P. VIII:71-84, September 1953.

A brief resumé has been attempted, outlining the mechanisms, diagnosis, and practical management of the patient with epilepsy. Much that has been said herein represents the author's attitudes and personal experience, although differing opinions are included. An attempt has been made to indicate this where such differences exist.

There are many aspects of the convulsive disorders which need elucidation. No attempt was made to discuss the surgical approach to focal seizures, especially psychomotor, as there is much in this subject which is controversial, and the procedures are largely still experimental.

Staff Evaluation

Paul Roofe, J. MED. EDUC., 28:9, September 1953.

There are three major uses of the case history technic as a tool in the evaluation of medical staffs. These are: (1) to indicate to the individual his own progress, (2) to satisfy the administration that all departments are moving forward in a harmonious manner, (3) to justify a request for personal recognition to the staff member in the form of a raise in rank or an increase in salary.

The evaluations should be carried out by the senior staff members and should be conducted in the manner of interviews, giving the staff member to be evaluated an opportunity to express his opinion of his performance in the past and plans for the future. If a person has been hired in any teaching capacity, he must be aware of his relationship with students; his demeanor, scholarship, inspiration, attitude, and even grooming all carry weight.

In all areas the person must know the literature in the field and be acquainted with that in related fields. He must be sentitive to student relations and must inspire the student to want to learn not thwart the learning process.

A person's colleagues are best equipped to know and evaluate his ability and performance. As adults we should be proficient in the discipline of scientific study but with true humility we should be prepared to acknowledge our shortcomings and grow with our profession.

Suggested evaluation charts are included in the article.

Regulation of Posture in Intact and Decerebrate Cat, I. Cerebellum, Reticular Formation, Vestibular Nuclei

James M. Sprague and William W. Chambers, J. NEUROPHYSIOL., XVI: 451-463, September 1953.

Selective, unilateral ablation of the medial cortex of the anterior lobe of the cerebellum in the cat decerebrated above or below the pons (also in the intact animal) results in a posture of ipsilateral extension and contralateral flexion of the limbs. Subsequent destruction of the ipsilateral fastigial nucleus completely reverses the cortical posture. Thus cortex and its nucleus of projection exert opposite influences on postural tonus. The fastigial nucleus, in addition to relaying cortical activity, has an important extracortical function.

Unilateral destruction of Deiter's vestibular nucleus results, in the decerebrate animal, in ipsilateral flexion and in contralateral extension of the limbs, similar to that following fastigial lesion. Bilateral destruction of Deiter's nuclei in the decerebrate animal gives an appreciable reduction, but not an abolishment, of extensor rigidity. Decerebrate rigidity is not dependent on the integrity of the vestibular nuclei.

Decerebrate rigidity is abolished by combined destruction of fastigial and Deiter's nuclei, leaving the pontobulbar reticular formation intact. This part of the reticular formation, as far as postural tonus is concerned, is not intrinsically active, but is dependent on activation from other sources.

Decerebrate rigidity is not abolished by brain stem transection at least as far caudal as the rostral part of the trapezoid body, providing neither fastigial nor Deiter's nuclei is injured. The evidence shows conclusively that only a small part of the brain stem reticular formation is sufficient to maintain decerebrate rigidity, providing that this part is activated from certain sources. Important among these are the fastigial and vestibular nuclei.

New explanations are offered on the basis of these observations for the dual function (stimulation and rebound) of the cerebellum on postural tonus, and for the mechanism of decerebrate rigidity.

Venous Blood Flow during the Valsalva Experiment Including Some Clinical Applications

Samuel Candel and David E. Ehrlich, AM. J. MED., XV:307-315, September 1953.

The venous pathways of the arm, neck and chest of 52 young men with normal cardiovascular systems were studied. In each subject a radiopaque substances was injected into a vein in the antecubital fossa and a control venogram was obtained at the end of quiet inspiration. Through the same needle in the same vein another injection was made while the patient was performing a Valsalva experiment (forced expiration with a closed glottis) and another venogram obtained. Comparison of the experimental films with the control films showed that during the Valsalva maneuver (1) the radiopaque substance was frequently arrested at the level of the first rib; (2) venograms were obtained which fulfilled the criteria for the diagnosis of venous occlusion of the axillary or subclavian vein, (3) there was a retrograde flow of radiopaque substance around the shoulder joint and into the veins of the neck, i.e., cervical, vertebral, inferior thyroid, internal and external jugular veins.

In the course of venography for the purpose of diagnosis of venous occlusion precautions should be taken to avoid an unintentional Valsalva maneuver on the part of the patient because a venogram could be obtained in a normal venous system, under conditions of the Valsalva experiment, which would exhibit all the features of venous occlusions.

The importance of arrest of blood flow and increased venous pressure at the level of the first rib during the Valsalva maneuver was discussed as one of the factors which contribute to the occurrence of axillary or subclavian vein thrombosis during effort.

The role of retrograde flow into vessels of the neck is discussed in connection with the significance of this phenomenon in explaining unusual sites of infections or neoplastic metastases.

Postural Effects in Tetralogy of Fallot

Paul R. Lurie, AM. J. MED., XV: 297-306, September 1953.

The postural effects upon cyanosis and dyspnea in tetralogy of Fallot, including the beneficial effects of squatting, the knee-chest and other positions, and the disadvantageous effect of standing are shown to be directly due to alterations in volume of venous return with consequent change in the oxygen saturation of mexed venous blood.

Speculations are adduced to explain the peculiarly marked effect of altered venous return in malformations when there is venoarterial shunt, reduced pulmonary blood flow coexisting with high systemic flow and absence of a tendancy to go into congestive heart failure.

Diagnostically, these postural effects are important when they can be demonstrated in the form of simple clinical tests. A patient demonstrating them will respond well to systemic-pulmonary anastomosis. Therapeutically, they are of real importance in carrying a patient through the period of waiting for definitive surgery.

The Juvenile Amputee

George T. Aitken and Charles H. Frantz, J. BONE & JOINT SURG., 35: 659-664, July 1953.

The juvenile amputee is defined as being under 21 years of age and having undergone a surgical amputation or having a congenital anomaly necessitating the use of a prosthesis. Children falling within this category came under the authors' supervision in the early fall of 1946.

The total number of cases of amputation was 192. Of these, 128, or 66.6 per cent, were surgical amputations, and 64, or 33.3 per cent, were congenital amputations. There were 137 males (71.3 per cent) and 55 females (28.7 per cent). The average age at which surgical amputation was performed was 11½ years.

Of 128 surgical amputations, revision for extensive or poorly placed scar was not necessary. There have been no tenotomies or re-amputations to further mobilize stumps. Bone overgrowth requiring surgical correction has been encountered in eight cases to date. Four neuromata have been sufficiently discomforting to be removed. There have been no operations for removal of spurs. Suction sockets, when properly fitted, in children are superior to the conventional above-the-knee prosthesis.

Studies in Respiratory Insufficiency, I. Carbon Dioxide and Oxygen Studies in Early Respiratory Paralysis in Poliomyelitis

David G. Dickinson, James L. Wilson, and Bruce D. Graham, AM. J. DIS. CHILD., 86:265-272, September 1953.

Concomitant laboratory studies and clinical observations were made on a group of 35 poliomyelitis patients in the first week of their disease in an attempt to determine whether or not laboratory evidence of respiratory insufficiency preceded clinical dyspnea in those in whom respiratory muscle paralysis developed.

Observations were made on 15 patients who at no time had detectable involvement of the respiratory muscles. These patients were uniformly found to be in a state of respiratory alkalosis, presumably from fear or apprehension.

Twenty patients were studied at the time mechanical respiratory assistance appeared clinically indicated. Fourteen of these were still hyperventilating and in a state of respiratory alkalosis at the time that respirator aid was instituted.

Most patients with acute poliomyelitis are in a state of respiratory alkalosis early in their disease.

Those patients in whom respiratory muscle paralysis develops continue in a state of respiratory alkalosis for a considerable period

after clinical signs of dyspnea appear.

The clinical picture usually associated with the need for artificial respiration in poliomyelitis is that of decreased respiratory reserve, or increased effort, and is usually not accompanied by actual respiratory failure until after the clinical picture of dyspnea has become well established. Therefore, given a normal airway and freedom from intrapulmonary disease, the average poliomyelitis patient will give ample warning of his need for a respirator before anoxia or CO_2 retention occurs.

Although extremely valuable for adjunct aid and for guiding later care of respirator patients, laboratory tests cannot replace careful clinical observations as criteria for deciding when a mechanical respirator should first be used.

Relationship Between Personality Factors and Fatigue in Severe Poliomyelitis

J. H. Conn, ARCH NEUROL. & PSYCHIAT., 70:3, September, 1953.

This article contains 14 case histories of poliomyelitis patients who have required respirator treatment. In all cases, extreme physical exertion preceded the acute illness and corroborates what many clinicians have observed in regard to the importance of fatigue.

There emerges from this small series a pattern of fixed compulsive behavior. Physically the patients appeared to be healthier and more active than the average person, and mentally better adjusted and happier. As a group they lacked spontaniety, aggression, and self-assertiveness. They had difficulty criticising others and did not experience anger. While striving to be independent, they were conscientious, anxious, and appeasing.

Frustrations were met by becoming more self-effacing, by adding to already heavy work loads, or by participating in various forms of exercise until a pathological state of fatigue developed.

The author concludes that it seems likely that these patients with a type of compulsive behavior continue to exert themselves during the preparalytic phase of poliomyelitis. There is adequate evidence available that the continuation of physical activity after the onset of meningitic symptoms has a highly significant correlation with the severity of the paralysis.

The Major Determinants in Normal and Pathological Gait

J. B. deC. M. Saunders, Verne T. Inman, and Howard D. Eberhart, J. BONE & JOINT SURG., 35:543-558, July 1953.

Human locomotion is a phenomenon of the most extraordinary complexity in which so great are the multitude of individual motions occurring simultaneously in the three planes of space that analysis is difficult without some unifying principle.

The adoption of the concept that fundamentally locomotion is the translation of the center of gravity through space along a pathway requiring the least expenditure of energy supplies the necessary unifying principle which permits of qualitative analysis in terms of the essential determinants of gait. The six major determinants are pelvic rotation, pelvic tilt, knee and hip flexion, knee and ankle interaction, and lateral pelvic displacement. The serial observations of irregularities in these determinants provide insight into individual variation and a dynamic assessment of pathological gait.

Pathological gait may be viewed as an attempt to preserve as low a level of energy consumption as possible by exaggerations of the motions at unaffected levels. Compensation is reasonably effective with the loss of one determinant of which that at the knee is the most costly. Loss of two determinants makes effective compensation impossible and the cost of locomotion in terms of energy is increased threefold with an inevitable drain upon the body economy.

Abstractors for January

Helen J. Hislop

Martha Wroe

Book Reviews . . . . .

Sexual Behavior in the Human Female. *By the Staff of the Institute for Sex Research, Indiana University —Alfred C. Kinsey, Wardell B. Pomroy, Clyde E. Martin, Paul H. Gebhard and Research Associates. Cloth; price $8.00. Pp. 842; 179 tables and 155 figures. W. B. Saunders Company, Philadelphia and London, 1953.*

With all the hue and cry over the Kinsey Reports it is difficult not to take sides. One fact seems to be emergent: few thinking people deny his right — scientific and ethical — to investigate this aspect of human behavior. It is biological, and Kinsey is trained in biology; it is social, and his Staff are trained in the social science. There can be little argument as to the nature of the inquiry and as to its prosecution. Implications and interpretation thus become focal points of evaluation.

On page 4 of this volume Kinsey says that it "can pretend to report behavior which may be typical of no more than a portion, although probably not an inconsiderable portion, of the white females living within the boundaries of the U.S." In the last 15 years 7,789 female case histories have been secured; of these, 5,940 figure in the present study. Age range is 2 to 90 years, with concentration in 16 to 50 years. Educational level includes 17 per cent with some high school, 56 per cent with some college, 19 per cent with college and beyond. Members of all religious groups are represented, divided according to devout, moderately so, and inactive; a need for more Catholic and Jewish women is acknowledged. On a chronological basis the age-classes are divided into before 1900, 1900 to 1910, and 1910 and after. Geographically, 69 per cent of the female subjects come from New York, Pennsylvania, Illinois, Indiana, California, New Jersey, Ohio, Florida, Massachusetts, and Maryland. The Southeast and Northwest United States are scantily

represented. Some 90 per cent of the women were urban. There are thus various lacunae in the sample, but it is still far and away the largest and most intensively analyzed group to be reported upon.

One of the factors of import to those who may work with children is the achievement of puberty. On a recall basis the present sample gave the mean age of the first appearance of public hair as 12.3 years, breast development as 12.5 years, first menstruation as 13.1 years, and completion of height as 15.9 years. The respective ranges, taken from other studies, are 11.0 to 11.3 years, 10.8 to 12.5 years, 12.9 to 13.9 years, and 14 to 16 years.

The core contribution of the Kinsey studies is the recognition of social stratification, so to speak, as relates to differences and frequencies. In females masturbation, for example, is almost twice as frequent in college graduate groups, occurs much less in the devoutly religious groups, and is higher in urban groups; yet it has little or no relation to parental occupation or class. Premarital petting shows a similar pattern, but in addition, has more than doubled (petting to orgasm) when generations born before 1900 and 1920 to 29 are compared. The females felt that such behavior definitely conduced to an improvement of marital coitus. Premarital coitus again shows doubling in a before-1900 and after-1900 comparison. It is more frequent in an urban environment, less frequent in the devoutly religious. As a rule the (later) marital partner was the companion. The data for extra-marital coitus show no relation to educational level before the age of 25, a greater frequency in higher educated groups after 25. Such an experience, per se, occurs more often among the less devout, but frequency is not related to either devout or inactive.

The foregoing summary is typical enough to permit the generalization that sexual behavior, rooted though it be in biology, is in many respects reflective of cultural levels and standards. It is in the sum of its biosocial context, only, that patterns of sexual behavior may be understood and evaluated. In excellent chapters on the anatomy and physiology of sexual response and orgasm Kinsey says that "in spite of the widespread and oft-repeated emphasis on the supposed differences between female and male sexuality, we fail to find any anatomic or physiologic basis for such differences." On the other hand, it is observed "that the male is conditioned by sexual experience more frequently than the female." It seems that the female is more influenced by social mores, the male more by the psychosocial context of his own experience. Kinsey feels that there is no hormonal basis to these differing sexual patterns.

No review can hope to cover the wealth of data in a Kinsey Report, and no review can really do justice to the evident care and thoroughness and conservatism. This is not a book for sensation-seekers to thrill over. It is a volume to study, to ponder; it is a volume to stimulate and, possibly, to irritate. It is a mirror reflecting the real rather than the ideal.

Ward Administration. *By Deborah MacLurg Jensen, R.N., M.A., Instructor in Nursing Education and Sociology, University of Missouri, Columbia. Cloth; price $4.00. Pp. 325; illustrated. C. V. Mosby Co., St. Louis, Mo., 1952.*

The publication of this book is timely. The changing trends in nursing make it necessary to redefine the functions of and the preparation for the hospital ward nurse. The changes are concerned mainly with the reorganization of the schools of nursing, the increasing need of auxiliary workers in the nursing care of the patient, and the development of various special services included in the hospital and outside of the hospital.

The author is well prepared to discuss this area in nursing. She has held important positions in nursing education and has written other books related to the contents of this book. *Ward Administration* is written in the form of a textbook and could well be used in classroom instructions in a school of nursing. It can be used also as a reference book in hospital ward staff education or as a handbook for the head nurse.

Ward administration is the duty of the head nurse and she is indeed an important member of the total hospital organization. All communications from and to the various departments concerned with the welfare of the patient must go through her. The author compares the complex pattern of the modern hospital to the hospital in the past when the duties of the head nurse were much simpler. The modern head nurse must be familiar with the activities of the whole hospital because she not only needs to make the ward a workable unit she must also make this unit fit into the total scheme of the hospital. She must be familiar with the general administration and with the hospital personnel practices as they apply to those working on her ward. If there is a school of nursing she is usually called upon to participate in its program of teaching. It is essential that the head nurse should recognize the total needs of the patient and that she should know the facilities in her community as well as the services in the hospital.

The author describes in some detail the duties of the head nurse in her administration of the ward and suggests methods for such activities as personnel management, supervision, and general housekeeping duties. Personnel management includes interviewing, orientation of new employees, assigning duties to a team or the individual worker, and assisting in personal problems. Supervision is described as a very important function, especially as a tool to improve the nursing care of the patient and to develop the personnel. The head nurse in this function is not a boss but a leader and a teacher. It is essential that she is well prepared in the skills performed by the workers for whom she is responsible. Situations adaptable for supervisory activities are suggested as well as evaluation methods, individual and group conferences, and staff education. Housekeeping duties consist of maintaining supplies, repair of equipment, and general order in the ward. Stress is placed on delegating duties to the appropriate person.

The book is divided into five units and an appendix. Each unit is followed by a complete and well annotated bibliography. The appendix contains suggestions for the contents of a ward manual with samples of various forms. There are a few line drawings representing trends in nursing.

Ward Administration is readable and informative. Many activities in administration described in this book could be used in other services within the hospital.

Introduction to Medical Science. *By Gulli L. Muller, M.D., formerly Pathologist and Director of Clinical Laboratory of the New England Hospital, Boston; Assistant Research Physician, Thorndike Memorial Laboratory of the Boston City Hospital;*

and Dorothy E. Dawes, R.N., M.A., Science Instructor, Schools of Nursing, Greater Boston; formerly Educational Director and Assistant Principal, the School of Nursing of the New England Hospital, Boston. Third Edition. Cloth, price $4.75. Pp. 610; illus. W. B. Saunders Company, Philadelphia and London, 1953.

The third edition of this book closely adheres to the previous editions in providing a textbook for the student nurse. New methods of diagnosis and treatment have been added or substituted for outmoded practices. A section on antibiotics has been rewritten to present recent knowledge in this field. Various other sections such as discussion of recently isolated vitamins, geriatrics, and further expansion of the Federal Security Agency, have been revised.

The contents of the book is divided into six units. Unit 1., The Development of Medical Science; Unit 2., The Causes of Disease; Unit 3., How Disease Manifests Itself in the Body; Unit 4., How the Doctor Makes a Diagnosis; Unit 5., How Disease is Treated; Unit 6., How Disease is Controlled and Prevented.

In these sections, one finds plainly written, easily understandable, and well illustrated material. At the conclusion of each chapter, there are review questions which are well stated to emphasize the material covered. A case history has been added to illustrate how a doctor makes a diagnosis by correlating his information and findings in a case.

At the conclusion of the book, is found a glossary and a table of prefixes and suffixes on tinted paper which are of value to the student in helping him to understand the terminology of the text.

In the reviewer's opinion the book would not be adequate as a text for physical therapy students. The content of the book is presented in such a simplified form as to be inadequate for students of the educational level of our present day physical therapy schools.

Sheltered Workshops and Homebound Programs. *Prepared by the National Committee on Sheltered Workshops and Homebound Programs. Spiral; price $1.00. Pp. 71. Published by the National Committee on Sheltered Workshops and Homebound Programs, New York, 1952.*

This paper-bound volume of about 75 pages contains a well organized and clearly stated resume of factors concerned with the organization and operation of sheltered workshops and homebound programs.

The introductory section deals with basic definitions where, for example, the differentiation between disability and handicap is properly made.

Basic organizational steps are outlined and interested community agencies are catalogued in a helpful manner.

Operational problems are covered in sufficient detail to serve as useful guidance material for almost any rehabilitation program.

Listings of major national agencies, interpretations of federal statutes governing employment practices, and cost accounting schedules conclude this very readable and useful book.

It is recommended reading for physicians, therapists, administrators and students who are interested in organized efforts in the field of rehabilitation.

Adjustment to Physical Handicap and Illness: A Survey of the Social Psychology of Physique and Disability. *By Roger G. Barker in collaboration with Beatrice A. Wright, Lee Meyerson and Mollie R. Gonick. Second edition. Paper binding; price $2.00. Pp. 440. The Social Science Research Council, New York, 1953.*

Although prepared as a guidepost for the reseacher, this bulletin will be of great interest to every medical reader. It is a fascinating digest of knowledge about the effects of abnormal physique upon the individual. Several hundred research reports were reviewed and appraised for the survey, gleaned from the literature of medicine, psychology, education, sociology, occupational therapy, vocational rehabilitation, vocational placement, and labor relations.

The somatopsychological aspects of orthopedic disabilities, tuberculosis, impaired hearing, and impaired vision are presented, as well as of normal variations in physique. Employment of the disabled and the social psychology of acute illness concern additional chapters and will have particular value for the physical therapist. Theory and topic discussions, amply illustrated with excerpts from reports, make up a large part of the material. At the end of each chapter the original research reports are summarized as to problem and subjects, method, results and comments.

Topics cover a wide range and include: "attitudes toward physical disability expressed in religious practices, fiction and humor"; "social significance of blindness"; "persisting effects of acute illness;" "behavior of very tall persons"; "studies of children attending special schools"; "employer practices in the hiring of the physically disabled"; and "the problem of help." As an example of discussion content, the last topic deals with conflict between disabled and nondisabled persons because of differences in definitions of necessary help. To the physically handicapped person this means help essential to the attainment of the goal, while to the nonhandicapped it means assistance that will expedite matters. Motivations for various attitudes are explained and recommendations are advanced for alleviating the situation.

Useful as the volume may be in enlarging the background of even the casual reader, its greatest service is intended for and will accrue to the research-minded. As the authors point out, "Research reports that are technically adequate on all counts are nonexistant." In addition to constructive criticism, they indicate areas in which there is a paucity of information and advance many specific suggestions for needed investigations. The discussions of methodological considerations alone could make the book required reading for all persons contemplating studies of disability. An extensive bibliography and thorough index are appended.

The reviews here published have been prepared by competent authorities and do not represent the opinions of the American Physical Therapy Association.

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INDICATIONS: Adjunct Therapy, Ancillary Treatment

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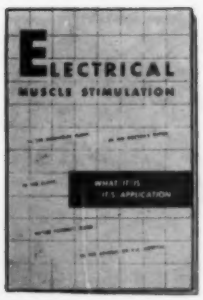

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